ORDER NO. MKE0012601C1
B6

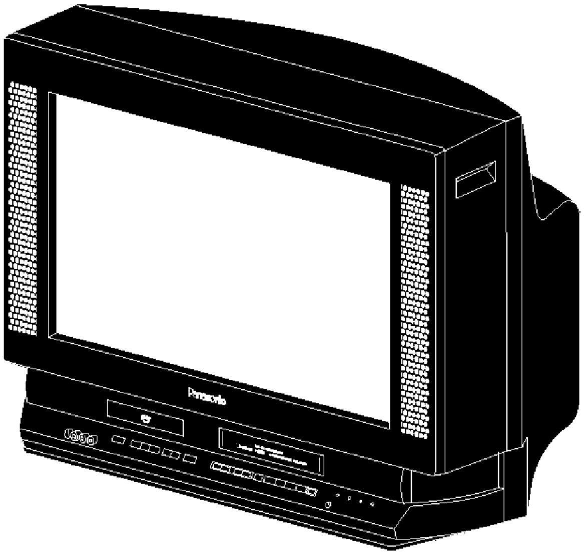
Service Manual

TV/DVD/VCR Combination

Omnivision VHS

DOLBY DIGITAL dts DIGITAL OUT DVD VIDEO COMPACT disc DIGITAL VIDEO COMPACT disc DIGITAL AUDIO

PV-DF2700-K



SPECIFICATIONS

ITEM		SPECIFICATION
VCR	Video	Head: 4 rotary heads helical scanning system
		Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more: SP: 230 lines LP/SLP: 220 lines
	Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads
		Input Level: AUDIO IN Jack (Phono type) -10 dBv 50 kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1 kΩ unbalanced
		Frequency Response: Normal Mono: SP: 100 Hz-8 kHz LP: 100 Hz-6 kHz SLP: 100 Hz-5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz-20 kHz
		Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB
		Wow and Flutter: Normal Mono: SP: Less than 0.2 % WRMS LP: Less than 0.3 % WRMS SLP: Less than 0.4 % WRMS Hi-Fi Stereo: Less than 0.015 % WRMS
	Tuner	Broadcast Channels: VHF 2~13, UHF 14~69 CABLE Channels: Midband A through I (14~22) Superband J through W (23~36) Hyperband AA~EEE (37~64) Lowband A-5~A-1 (95~99) Special CABLE channel 5A (01) Ultraband 65~94, 100~125
	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/s), LP: 21/32 i.p.s (16.67 mm/s), SLP: 7/16 i.p.s (11.12 mm/s) Record/Playback Time: 8 hr. with 160 min. type tape used in SLP mode FF/REW Time: Less than 2-1/2 min. (120 min. type tape)

ITEM		SPECIFICATION
VCR	Tape Format	Tape width 12.7 mm (1/2 inch) high density tape
FM RADIO	Band Range	87.5 MHz-108.1 MHz
DVD	Discs Played	(1) DVD-VIDEO disc: 12 cm (5 inch) single-sided, single-layer 12 cm (5 inch) single-sided, double-layer 12 cm (5 inch) double-sided, double-layer (one layer per side) 8 cm (3 inch) single-sided, single-layer 8 cm (3 inch) single-sided, double-layer 8 cm (3 inch) double-sided, double-layer (one layer per side) (2) Compact disc (CD-DA, VIDEO CD): 12 cm (5 inch) disc, 8 cm (3 inch) disc
	Didital Audio Output	Optical digital output: Optical connector
	Pickup	Wave length: 655 nm (DVD), 790nm (Video CD/CD) Laser power: CLASS II
DISPLAY	Picture Tube	27 inch diagonal PureFlat™ Picture Tube
GENERAL	Power	Source: 120 V AC±12 V AC, 60 Hz±3 Hz
		Consumption: Approx. 174 W (Power on), Approx. 4.5 W (Power off
	Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal
	Operating Condition	5 °C-35 °C (41 °F-95 °F) (Temperature) 10 %-75 % (Humidity)
	Dimension (W x H x D)	760 mm x 651 mm x 503 mm (29-15/16 inch x 25-5/8 inch x 19-3/4 inch)
	Weight	52.0 kg (114.6 lbs.)

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

1. SAFETY PRECAUTIONS

1.1. GENERAL GUIDELINES

1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations are properly installed.
5. Before turning the receiver on, measure the resistance between B+ line and chassis ground. Connect (-) side of an ohmmeter to the B+ lines, and (+) side to chassis ground. Each line should have more resistance than specified, as follows :

B+ Line	Minimum Resistance
130 V	1 k Ω (Cold chassis ground)
27 V	180 Ω (Cold chassis ground)
17 V	110 Ω (Cold chassis ground)

6. When the TV set is not used for a long period of time, unplug the power cord from the AC outlet.
7. Potentials, as high as 34.5 kV are present when this TV set is in operation. Operation of the TV set without the rear cover involves the danger of a shock hazard from the TV set power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture

tube to the CRT ground of receiver before handling the tube.

8. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. LEAKAGE CURRENT COLD CHECK

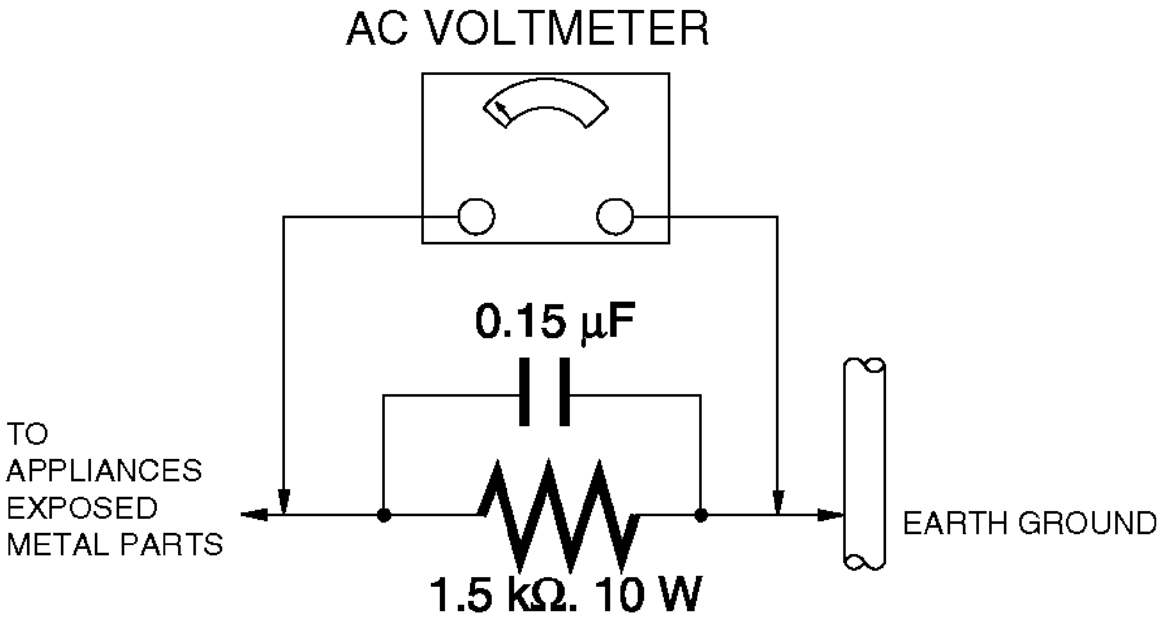
1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. For physically operated power switches, turn power on. Otherwise skip step 2.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 MΩ and 12 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.3. LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet.
   Do not use a isolation transformer for this check.
2. Connect a 1.5 kΩ, 10 W resistor, in parallel with a 0.15 µF capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS.
   A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

Figure 1

Hot-Check Circuit



2. X-RADIATION

WARNING :

1. **The potential source of X-Radiation in TV sets is the High Voltage section and the picture tube.**
2. **When using a picture tube test fixture for service, ensure that the fixture is capable of handling 34.5 kV without causing X-Radiation.**

NOTE:

It is important to use an accurate periodically calibrated high voltage meter.

1. **Reduce the brightness to minimum.**
2. **Set the SERVICE switch to SERVICE .**
3. **Measure the High Voltage. The meter reading should indicate 32.0 kV±2.5 kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.**
4. **To prevent an X-Radiation possibly, it is essential to use the specified picture tube.**

2.1. HORIZONTAL OSCILLATOR DISABLE CIRCUIT TEST

SERVICE WARNING :

The test must be made as a final check before set is returned to the customer.

1. **With the rear cover removed, supply about a 120 V AC power source to the set, turn on the set.**
2. **Set the customer controls to normal operating positions.**
3. **Short between TP891 and TP892 on the Main circuit board with a jumper wire. Confirm that the picture goes out of horizontal sync.**
4. **If this does not occur, the horizontal oscillator disable circuit is not operating. Follow the Repair Procedures of horizontal oscillator disable circuit before the set is returned to customer.**

2.2. REPAIR PROCEDURES OF HORIZONTAL OSCILLATOR DISABLE CIRCUIT

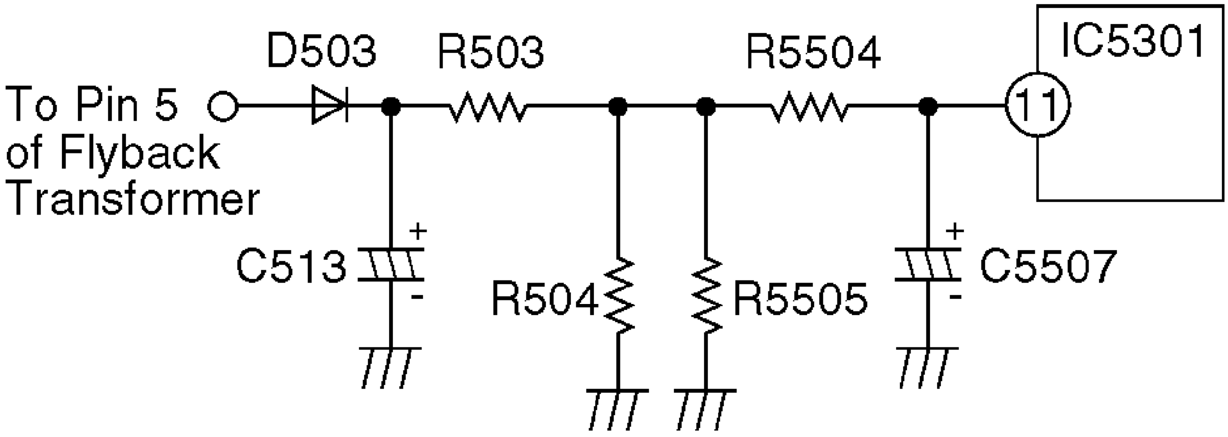
1. **Connect a DC voltmeter between capacitor C513 (+) on the Main circuit board and chassis ground.**
2. **If approximately +21.5 V is not present at that point when 120 V AC is applied, find the cause. Check R503, R5505, C5507, C513 and D503.**
3. **Carefully check above specified parts and related circuits and parts. When the circuit is repaired, try the horizontal oscillator disable circuit test again.**

2.3. CIRCUIT EXPLANATION

2.3.1. HORIZONTAL OSCILLATOR DISABLE CIRCUIT

The positive DC voltage, supplied from the D503 cathode for monitoring high voltage, is applied to the IC5301 Pin11 through R503 and R5504. Under normal conditions, the voltage at IC5301 Pin 11 is less than approx. 3 V. If the high voltage at Flyback Transformer Pin 5 exceeds the specified voltage, the positive DC voltage which is supplied from the D503 cathode also increases. The increased voltage is applied to IC5301 Pin11 through R503 and R5504. Due to the increased voltage at IC5301 Pin11, the horizontal oscillator frequency increases, the picture goes out of horizontal sync, the beam current decreases and the picture become dark in order to keep X-radiation under specification.

Figure 2



2.4. LASER PRODUCT

CLASS I LASER PRODUCT

- **This equipment is certified to comply with DHHS Rules 21 CFR Chapter 1, Subchapter J in effect as of date of manufacture. (Only for U.S.A.)**

This equipment is classified as a Class I (Class 1) level LASER Product and there is no hazardous LASER radiation with the safety protection.

Caution:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Danger:

The serviceman should not remove the cover of drive unit and should not service because the drive unit is a non- serviceable parts. Please check that the labels shown in Fig. D3 on the bottom of the drive unit.

Never touch the internal parts in order to avoid EXPOSURE TO VISIBLE LASER RADIATION.

Unplug the AC power cord to the equipment when opening the top cover.

When the power switch is On, do not place your eyes close to the front panel opening door or the other openings to look into the interior unit.

LASER Specification

Class I level A LASER Product (Class 1 level A LASER Product)

Wave Length:

660 - 675 nm (at DVD)
775 - 815 nm (at CD)

Laser Power:

No hazardous radiation is emitted with the safety protection.

2.5. PRECAUTION OF LASER DIODE

CAUTION:

This unit utilizes a class II laser. Visible laser radiation is emitted from the optical pickup lens when the unit is turned on:

1. **Do not look directly into the pickup lens.**
2. **Do not use optical instruments to look at the pickup lens.**
3. **Do not adjust the preset variable resistor on the optical pickup.**
4. **Do not disassemble the optical pickup unit.**
5. **If the optical pickup is replaced, use the manufactures specified replacement pickup only.**
6. **Use of control or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.**

3. PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors are semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION:
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

"NOTE to CATV system installer :

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical."

4. OPERATION GUIDE

5. SERVICE NOTES (PLEASE READ)

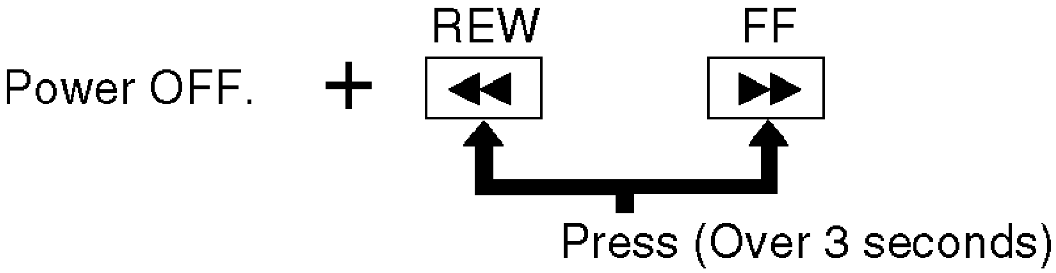
5.1. SERVICE NOTES

5.1.1. SIMPLIFIED FAULT FINDING DATA

Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 4 digit fault code and communication for I^2C bus code will be displayed on TV screen. The Simplified Fault finding data is stored in the Memory IC (IC6004). This data is cleared after it is displayed, and then the POWER button is pressed back on.

1. With power turned off, press FF and REW buttons on unit together for over 3 seconds.

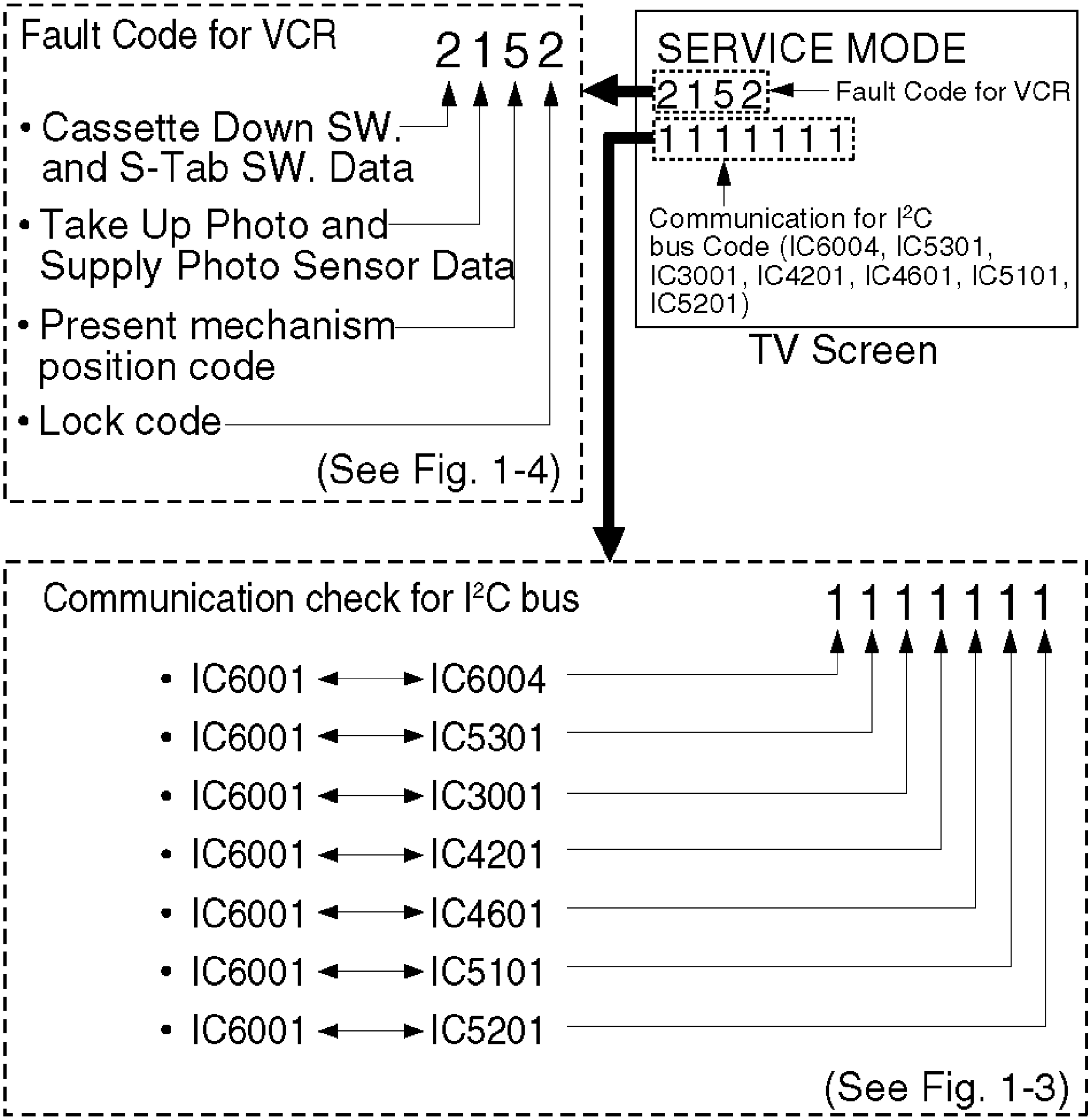
Fig. 1-1



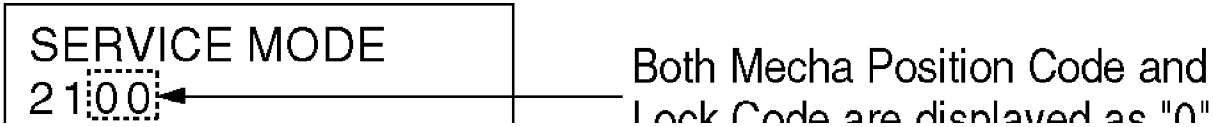
2. TV power comes on and the unit goes into service mode.
4 digit for fault code and communication for I^2C bus code will be displayed.

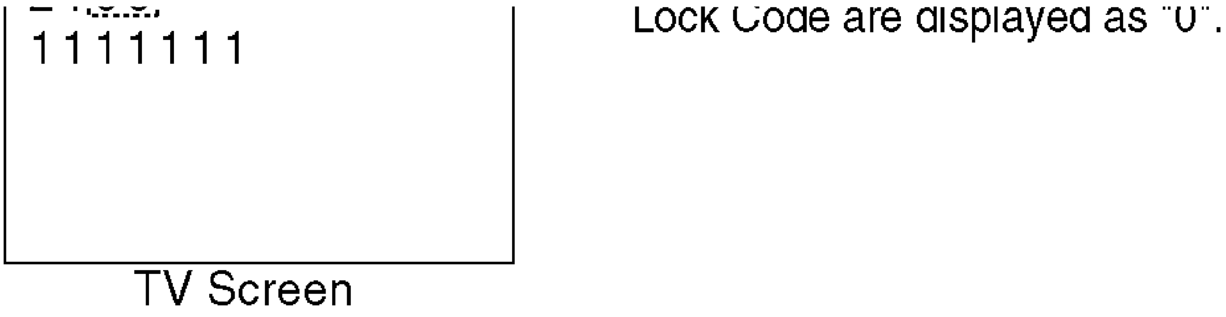
Fig. 1-2

Code Digit Position


Fault Code for VCR
2152
• Cassette Down SW. and S-Tab SW. Data
• Take Up Photo and Supply Photo Sensor Data
• Present mechanism position code
• Lock code
(See Fig. 1-4)
SERVICE MODE
2152
Fault Code for VCR
1111111
Communication for I²C bus Code (IC6004, IC5301, IC3001, IC4201, IC4601, IC5101, IC5201)
TV Screen
Communication check for I²C bus
1111111
• IC6001 ↔ IC6004
• IC6001 ↔ IC5301
• IC6001 ↔ IC3001
• IC6001 ↔ IC4201
• IC6001 ↔ IC4601
• IC6001 ↔ IC5101
• IC6001 ↔ IC5201
(See Fig. 1-3)

Note:
<Normal Operation (VCR is not in Shut-off condition)>


SERVICE MODE
2100
Both Mecha Position Code and


1 1 1 1 1 1 1
TV Screen
Lock Code are displayed as "0".

<When any Lock occurs>

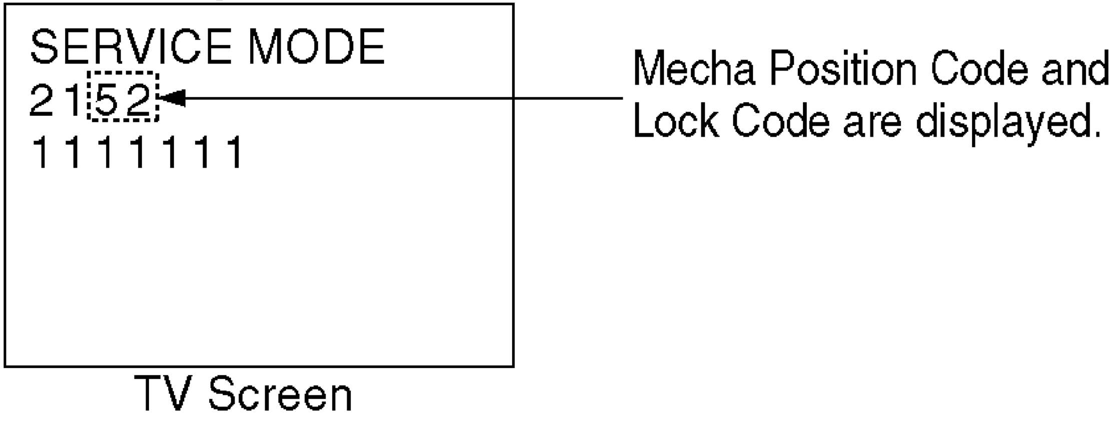

SERVICE MODE
2 1 5 2
1 1 1 1 1 1 1
TV Screen
Mecha Position Code and
Lock Code are displayed.

Fig. 1-3

(Communication check for I^2C bus)

Explanation of Codes	Code No.						
Communication check for I^2C bus (IC6001↔IC6004) ----- **NG** **OK**	0 1						
Communication check for I^2C bus (IC6001↔IC5301) ----- **NG** **OK**		0 1					
Communication check for I^2C bus (IC6001↔IC3001) ----- **NG** **OK**			0 1				
Communication check for I^2C bus (IC6001↔IC4201) ----- **NG** **OK**				0 1			
Communication check for I^2C bus (IC6001↔IC4601) ----- **NG** **OK**					0 1		
Communication check for I^2C bus (IC6001↔IC5101) ----- **NG** **OK**						0 1	
Communication check for I^2C bus (IC6001↔IC5201) ----- **NG** **OK**							0 1

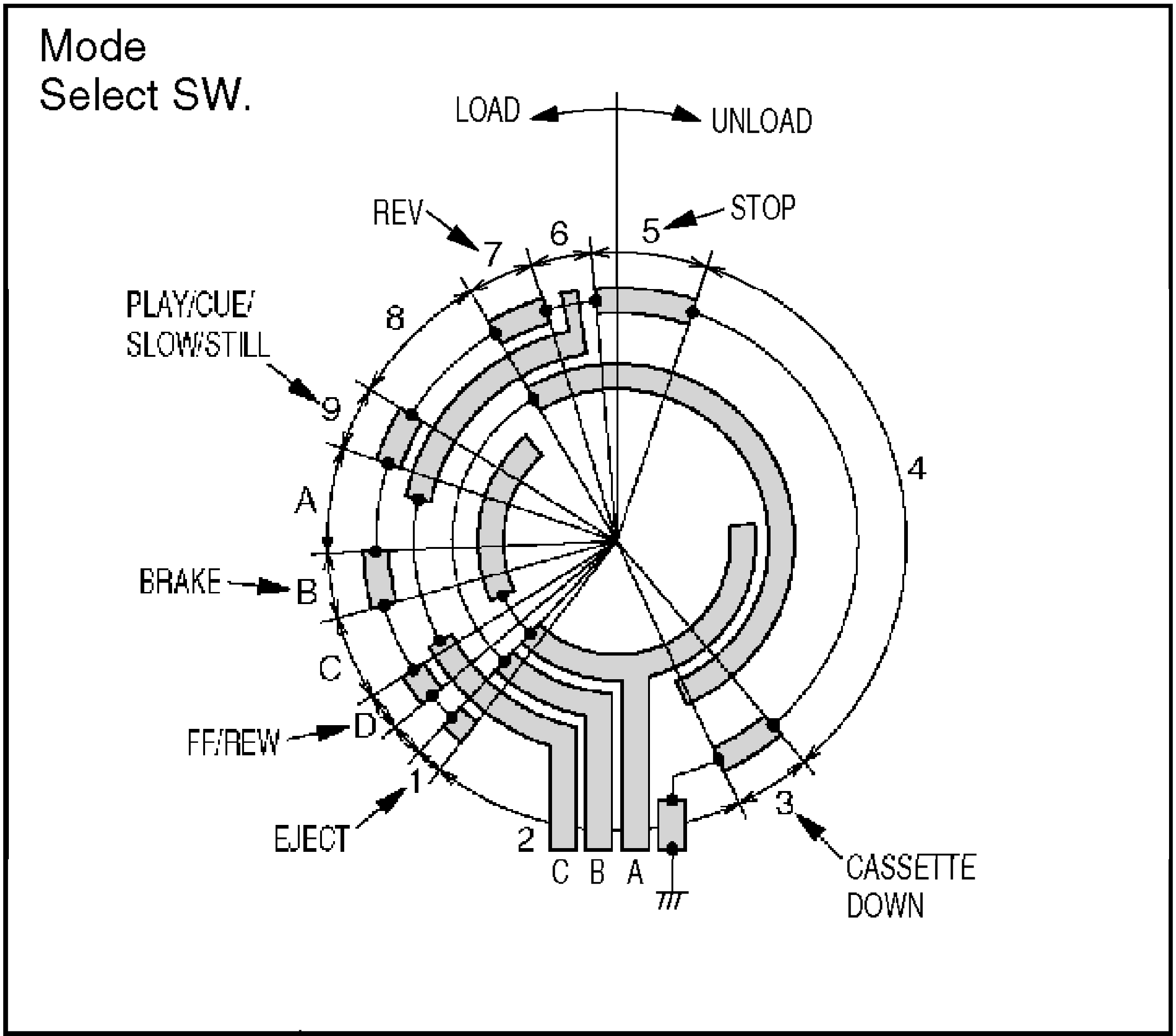
Fig. 1-4

(Fault Code for VCR)

Explanation of Codes	Code No.			
S-Tab SW. Data				
• S-Tab SW. is off.	1			
• S-Tab SW. is on.	2			
Take Up and Supply Photo Sensor Data				
• No light detected at either sensor.		1		
• Take Up Photo Sensor detected at beginning of tape.		2		
• Supply Photo Sensor detected at end of tape.		3		
• Light detected at both sensors.		4		
Present Mechanism Position Code				
• VCR is not in shut-off condition.			0	
When no Lock is occurs (VCR is not in shut-off condition), "0" is always displayed. When 1 to 4 listed in Lock code occurs, Mechanism Position Code (1 to D) is displayed. (Refer to Fig. 1-5.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note)				
• VCR is not in shut-off condition.				0
• Reel lock.				1
• Cylinder lock.				2
• Exceeds loading/unloading time				

• Exceeds loading/unloading time. (Mechanism Lock)				3
• Exceeds Cassette loading/unloading time. (Cassette Lock)				
Tape Unloading (direction)			1	4
Tape Loading (direction)			2	4

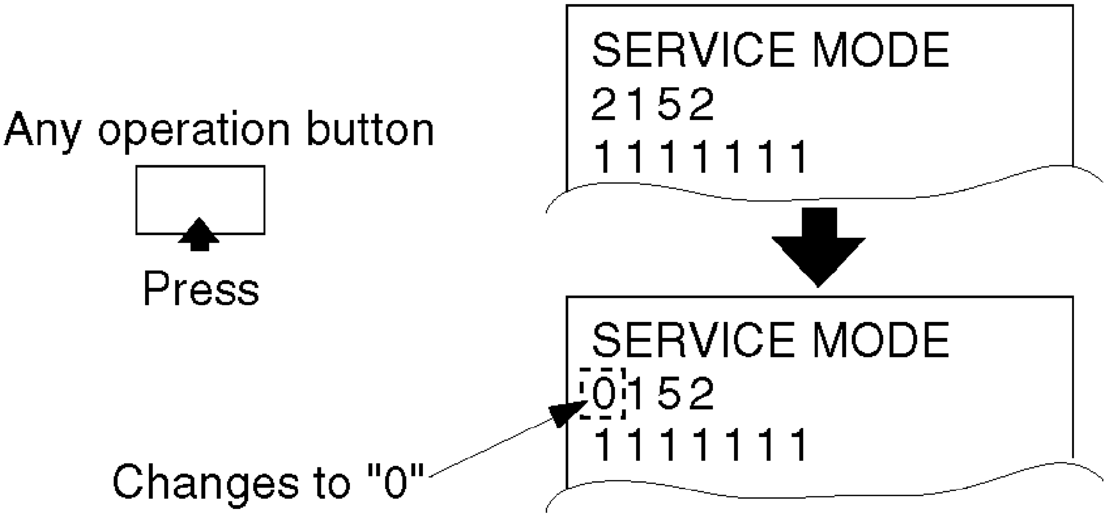
Fig. 1-5


Mode
Select SW.
LOAD
UNLOAD
REV
STOP
7
6
5
PLAY/CUE/
SLOW/STILL
8
9
A
4
BRAKE
B
C
FF/REW
D
1
EJECT
2
C B A
3
CASSETTE
DOWN

Mechanism position	EJECT		CASSETTE DOWN		STOP		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

3. Press any operation button except for POWER or PLAY (DVD) on either the unit, or the remote to detect that a key has been pressed. The 1st digit changes to "0" only when key is detected.

Fig. 1-6


Any operation button
Press
SERVICE MODE
2152
1111111
SERVICE MODE
0152
1111111
Changes to "0"

Note:

When 1 to 4 listed in Lock code occurs, the VCR stops and all VCR function buttons except for power become non-operational.

5.1.2. SELF-DIAGNOSTIC TEST FUNCTION FOR DVD

This unit has a Self-Diagnostic function which detects a problem or malfunction within the unit and displays its corresponding Error code on TV Screen.

5.1.2.1. How to enter DVD Self-Diagnostic mode

1. Insert a DVD disc into the DVD Unit.

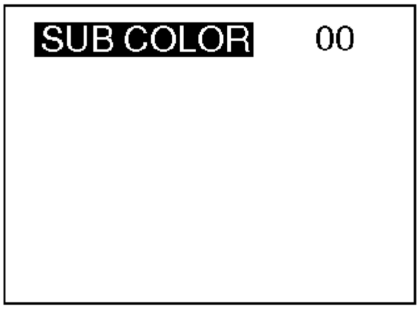
2. Set the unit to DVD mode. Then, press STOP button to stop playback.

Note:

Do not let a DVD play during DVD Self-Diagnostic mode.

3. Press and hold STOP/EJECT, PLAY/REPEAT, and VOL- buttons of VCR operation panel of the unit together for over 5 seconds with no cassette inserted. The adjustment overlay will appear on the TV screen.

Fig. 2-1


SUB COLOR
00

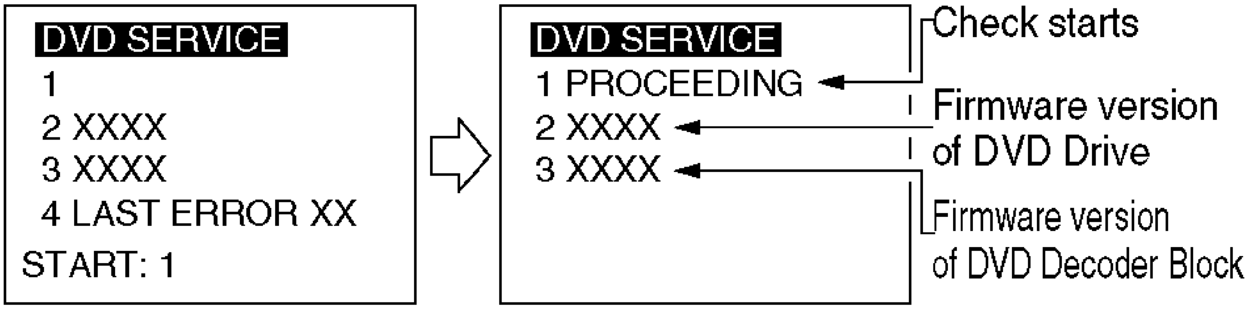
4. **Press DISPLAY key on the remote control to enter DVD Self-Diagnostic mode. Then, press "1" key on the remote control. The DVD Self-Diagnostic Test function will start.**

   Note:

   If "2" key is pressed, the firmware version of DVD Drive (A number of 4 figures) is displayed.

   If "3" key is pressed, the firmware version of DVD Decoder Block (A number of 4 figures) is displayed.

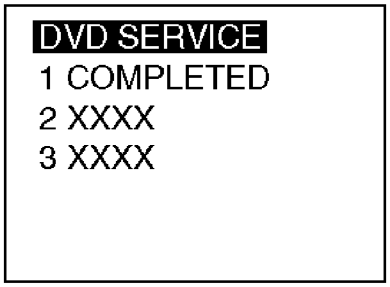
Fig. 2-2


DVD SERVICE
1
2 XXXX
3 XXXX
4 LAST ERROR XX
START: 1
DVD SERVICE
1 PROCEEDING
2 XXXX
3 XXXX
Check starts
Firmware version of DVD Drive
Firmware version of DVD Decoder Block

5. **After a few minutes (approx. 1~5 minutes), the check results will appear on TV screen.**

   - **If no error is detected, "COMPLETED" will appear as shown in Fig. 2-3. Be sure to press Power OFF to end. Then, press Power ON again and remove a DVD from the DVD Unit.**

Fig. 2-3


DVD SERVICE
1 COMPLETED
2 XXXX
3 XXXX

   - **If some error is detected, 4 digit for Error Code will appear as shown in Fig. 2-4.**

Fig. 2-4

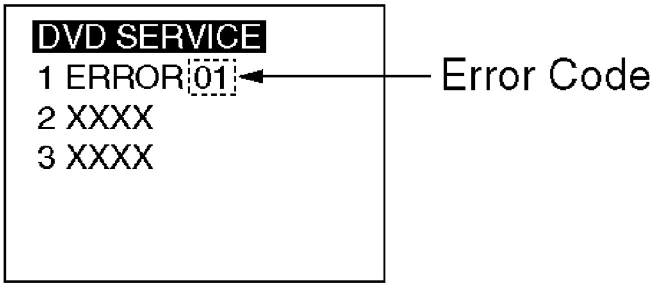


Fig. 2-5

Error Code

Error Code	Explanation of cause
00	No Error
01	Decoder Error (IC8000)
02	SDRAM Error (IC8100, IC8101)
03	NTSC Encoder Error (IC8200)
04	Audio DAC Error (IC8403)
05	EEPROM Error (IC8001)
06	Flash ROM Error (IC8301)
10	Loading Error
30	DMA(Direct Memory Access) Transmisson Error
40	Spindle Motor Error
50	Traverse Error
60	Servo Error
70	Recovery Error

5.1.3. HOW TO UPDATE THE FIRMWARE OF DVD

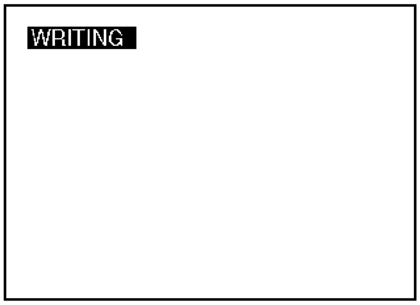
It is possible to update the firmware version of DVD using Firmware Disc.

5.1.3.1. How to update the firmware of DVD:

1. **Confirm the firmware version of DVD Drive. Refer to "SELF-DIAGNOSTIC TEST FUNCTION FOR DVD."**
2. **Set the unit to DVD mode.**

3. **Press OPEN/CLOSE button to open the tray. Then, place the Firmware Disc on the tray.**
4. **Close the tray. Updating will begin automatically as shown.**

Fig. 3



WRITING

5. **After approx. 1 minute, the tray will open automatically.**
   Note:
   If the tray has still not opened after 3 minutes, updating was unsuccessful. In this case, repeat above steps from step 1.
6. **Remove the Firmware Disc from the tray. Then, turn off the power.**
7. **Turn on the Power. The tray will close automatically. Then, confirm that the firmware version of DVD is changed to the number of the Firmware Disc.**

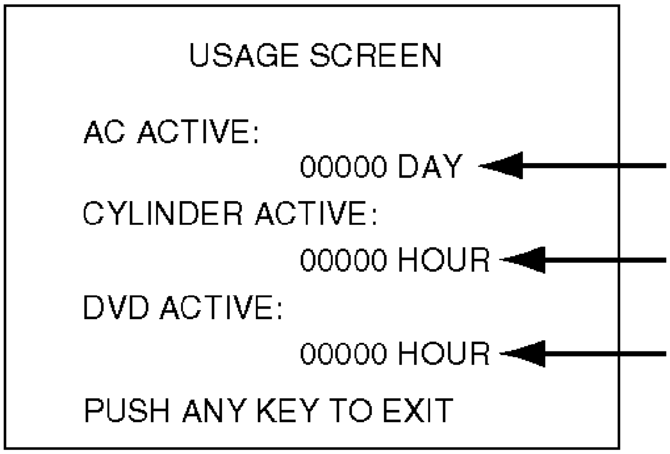
5.1.4. USAGE SCREEN MODE

Function displayed on the TV monitor:

- **the total elapsed "Power on" time (in days)**
- **the total elapsed "Cylinder rotation" time (in hours)**
- **the total elapsed "DVD play" time (in hours).**

1. **With power turned and no cassette, press STOP/EJECT button on VCR and 7 key on remote together.**
   The USAGE SCREEN will be displayed on the TV Monitor.

Fig. 4



USAGE SCREEN

AC ACTIVE:
00000 DAY
CYLINDER ACTIVE:
00000 HOUR
DVD ACTIVE:
00000 HOUR
PUSH ANY KEY TO EXIT

The total elapsed "Power on" time (in days).
The total elapsed "Cylinder rotation" time (in hours).
The total elapsed "DVD play" time (in hours).

<TV monitor>

Note:

1. **After replacing the Cylinder Unit, press COUNTER RESET button on remote in this mode. Only Total elapsed "Cylinder rotation" time (in days) will be cleared to 0.**
2. **After replacing the DVD Unit, press ADD/DLT button on remote in this mode. Only Total elapsed time "DVD Play" time (in hours) will be cleared to 0.**
3. **To release from Usage Screen Mode, press any operation button on VCR or insert a cassette tape in this mode. VCR will return to normal operation mode.**

5.1.5. GROUNDING FOR ELECTROSTATIC BREAKDOWN

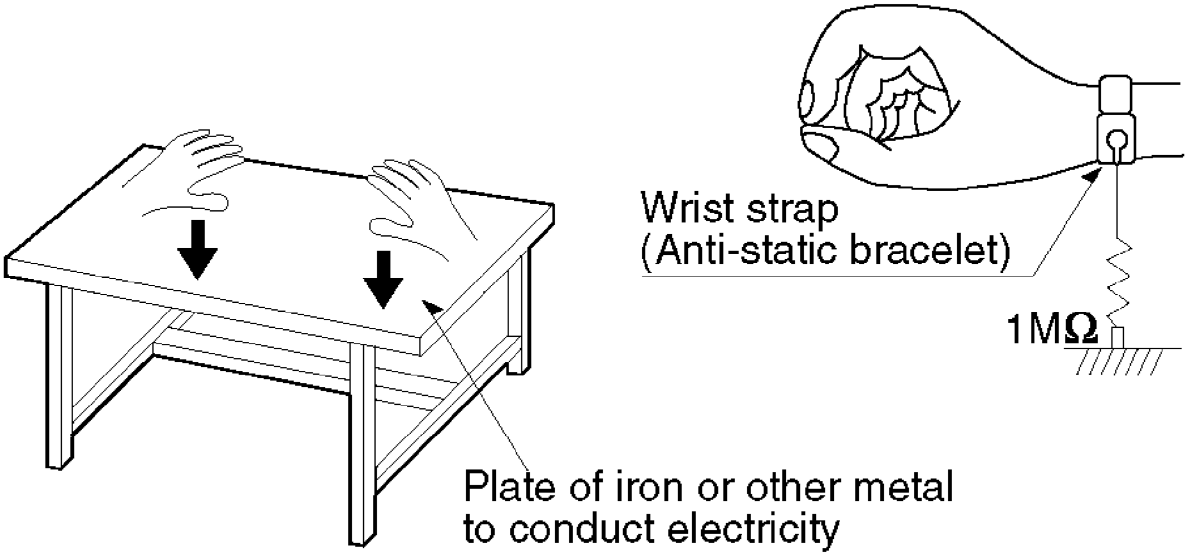
Prevention

1. **Human body grounding**
   Use the antistatic wrist strap to discharge the static electricity from your body.
2. **Work table grounding**
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.

Fig. 5


Wrist strap
(Anti-static bracelet)
1MΩ
Plate of iron or other metal
to conduct electricity

5.1.6. DVD DECODER C.B.A. REPLACEMENT NOTE

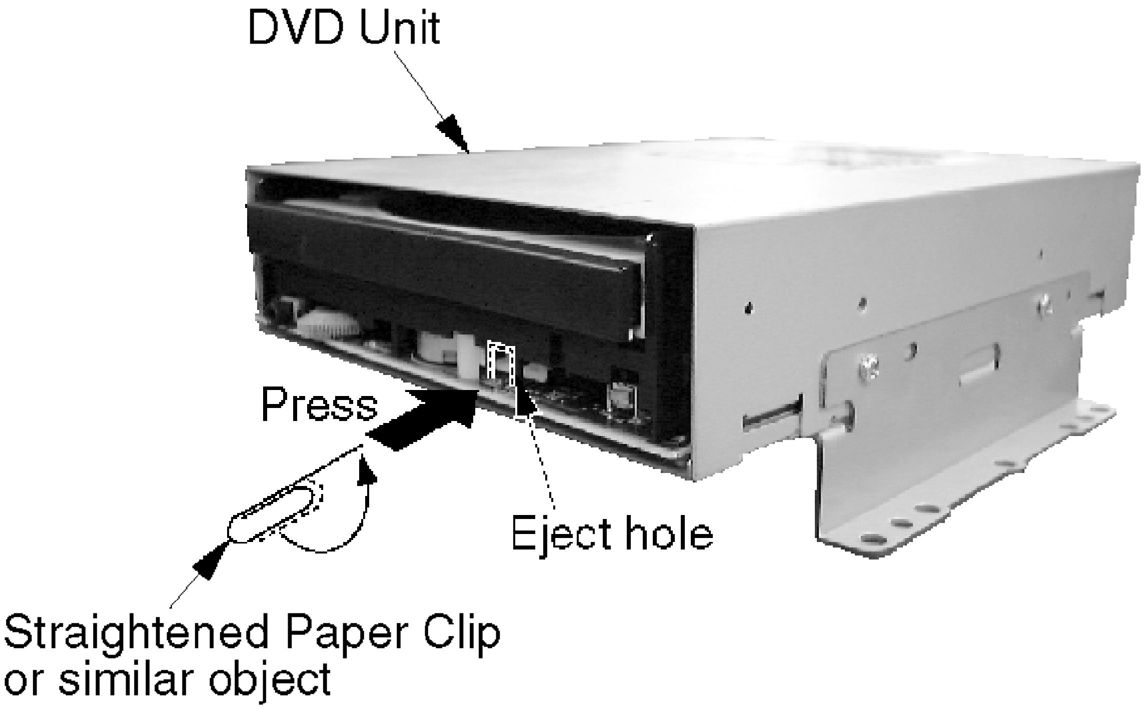
After replacing DVD Decoder C.B.A., confirm the Firmware version of DVD using Self-Diagnostic function. If the version is different than that indicated on the Firmware Disc, update it using the Firmware Disc. Refer to "HOW TO UPDATE THE FIRMWARE OF DVD."

5.1.7. METHOD FOR EJECTING THE DVD TRAY MANUALLY

1. Insert a Straightened Paper Clip or similar object into the Eject hole.

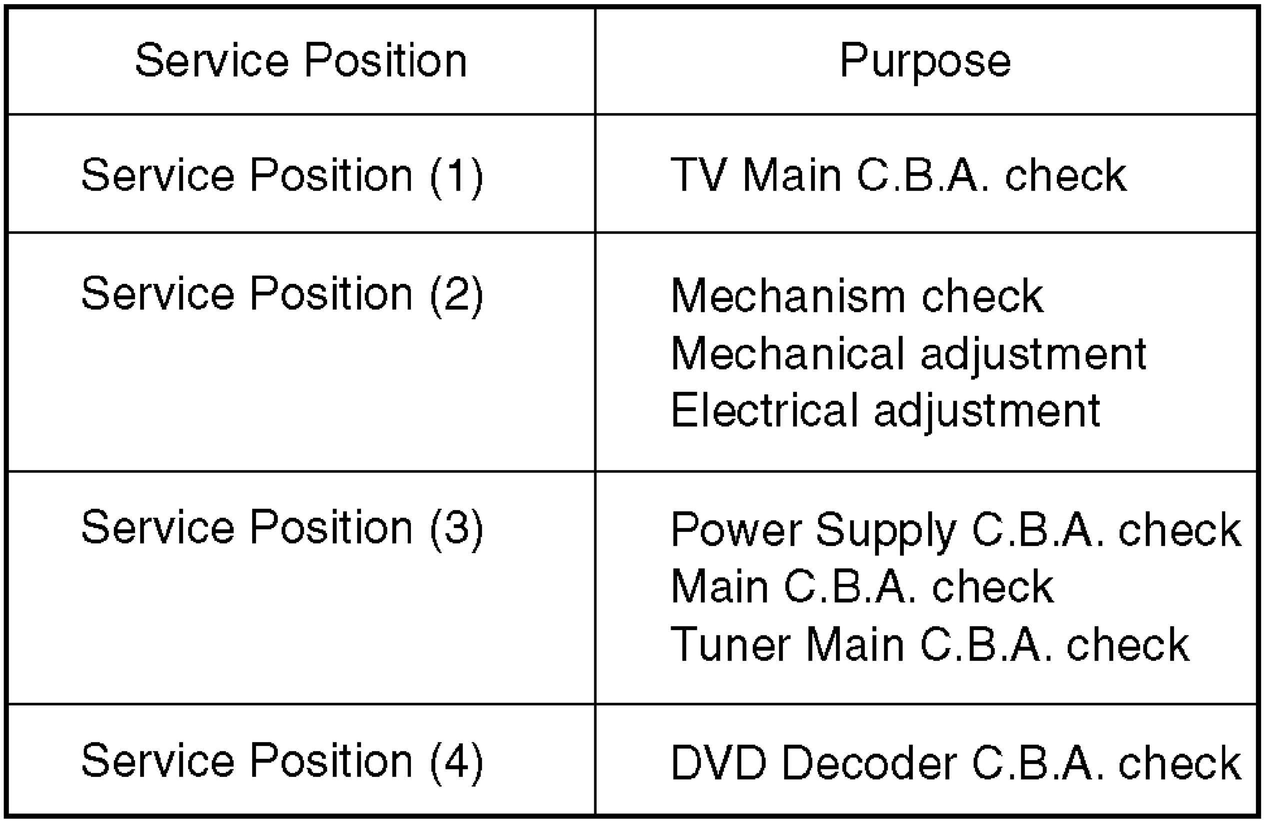
2. Press it gently, and then pull the Tray fully out.

Fig. 6


DVD Unit
Press
Eject hole
Straightened Paper Clip
or similar object

5.1.8. SERVICE POSITION

5.1.8.1. Service Position



Service Position	Purpose
Service Position (1)	TV Main C.B.A. check
Service Position (2)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (3)	Power Supply C.B.A. check Main C.B.A. check Tuner Main C.B.A. check
Service Position (4)	DVD Decoder C.B.A. check

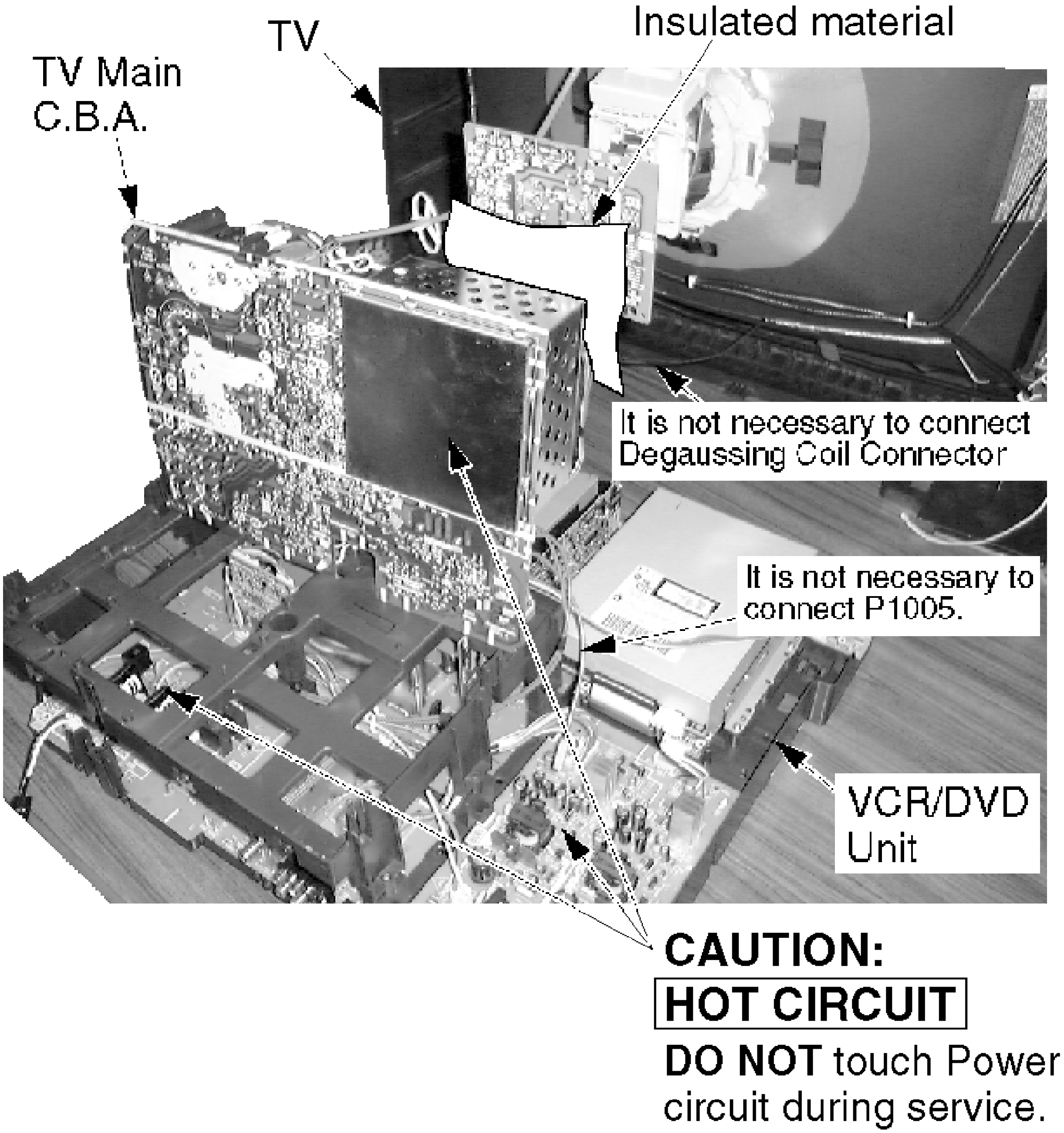
CAUTION:

HOT CIRCUIT(Primary circuit) exists on the Power Supply C.B.A., TV Main C.B.A., and Tuner Main C.B.A.

Use extreme care to prevent accidental shock when servicing.

5.1.8.1.1. Service Position (1)

Fig. 7-1

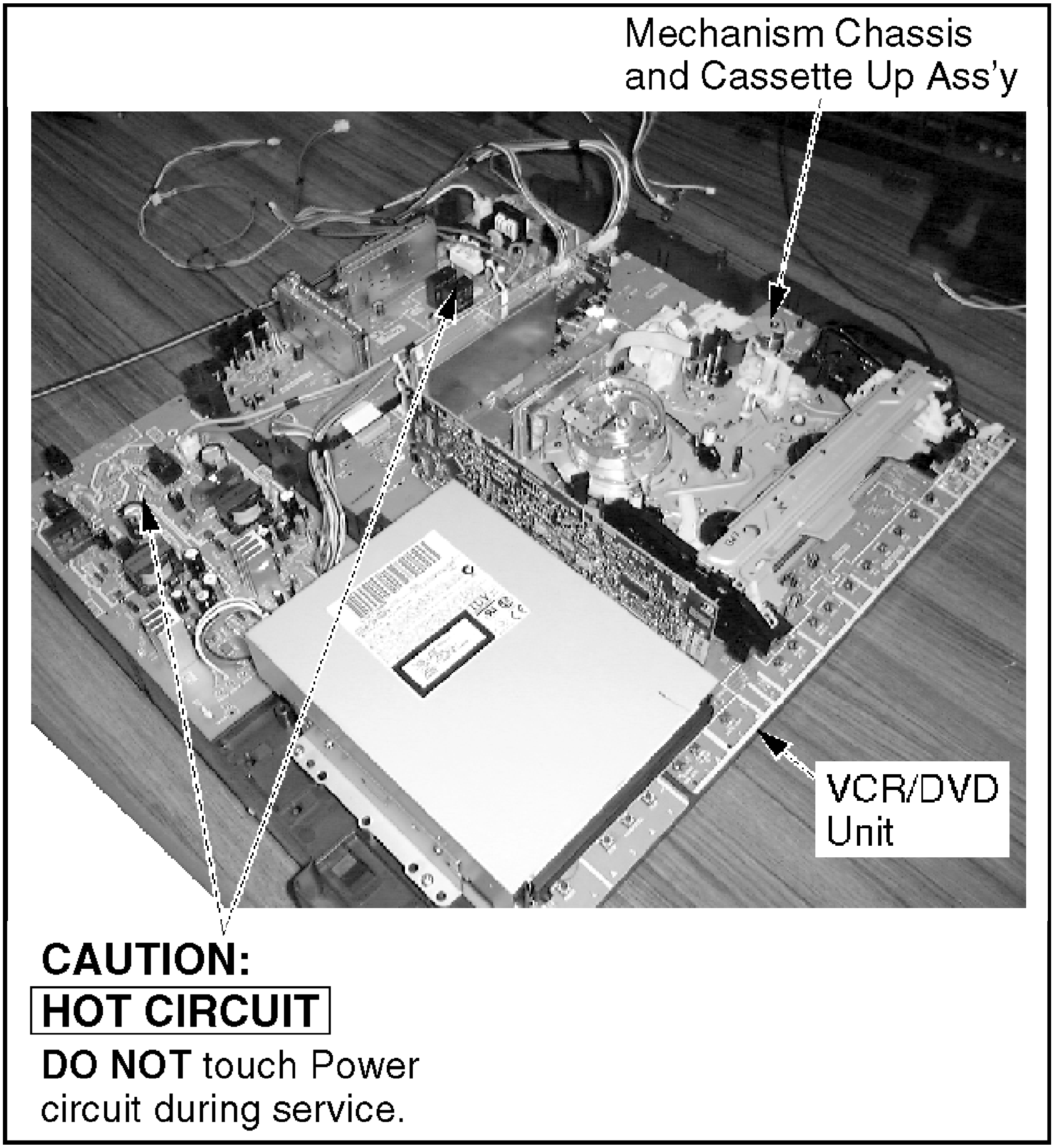

TV Main C.B.A.
TV
Insulated material
It is not necessary to connect Degaussing Coil Connector
It is not necessary to connect P1005.
VCR/DVD Unit
CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.

5.1.8.1.2. Service Position (2)

In Service Position (2), the VCR/DVD Unit works without the TV Main Ass'y being connected to the TV Monitor.

In this position, Mechanism check, Mechanism adjustment, and Electrical adjustment can be performed.

Fig. 7-2


Mechanism Chassis and Cassette Up Ass’y
VCR/DVD Unit
CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.

5.1.8.1.3. Service Position (3-1)

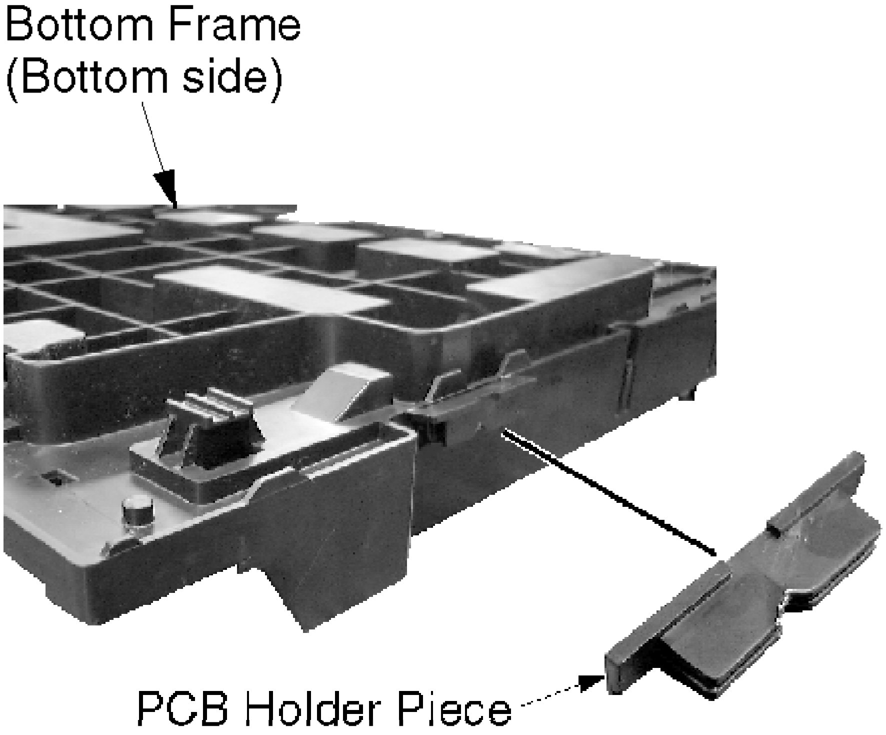
In Service Position (3-1), the VCR/DVD Unit works without the TV Main Ass’y being connectecd to the TV Monitor.

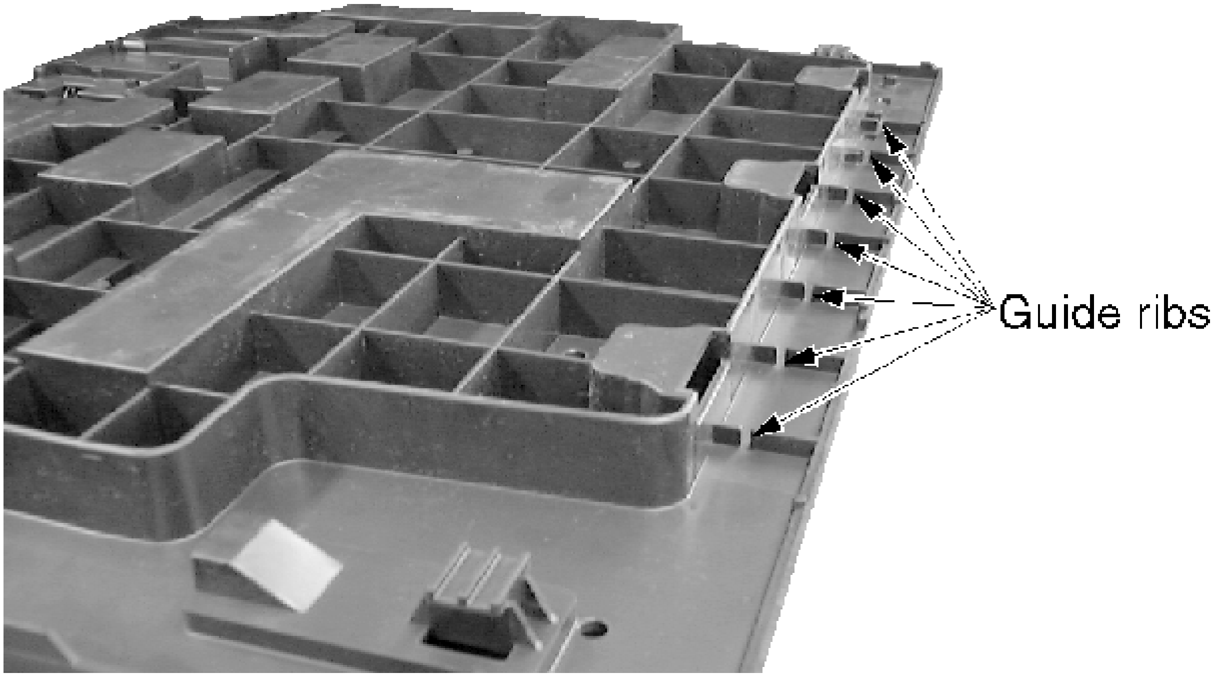
In this position, the Power Supply C.B.A. check, the Main C.B.A. check, and the Tuner Main C.B.A. check can be performed.

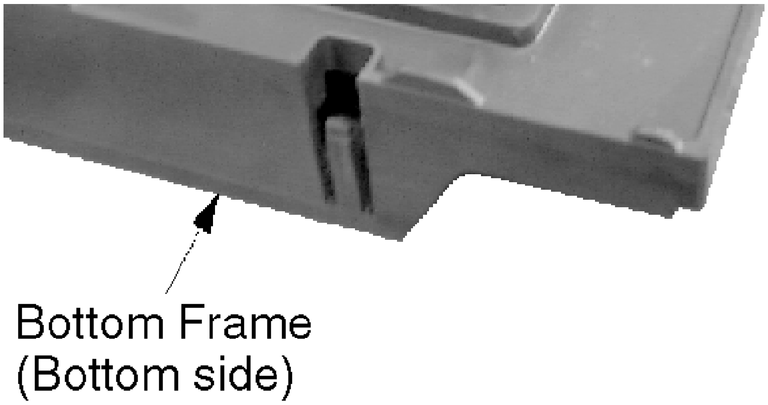
1. Remove the Rear Cover and VCR/DVD Ass’y.

2. **Remove the TV Main Ass’y, CRT Unit, Tuner Main C.B.A., Power Supply C.B.A., VCR Chassis Unit, DVD Unit, DVD Decoder C.B.A., and Operation C.B.A. from Bottom Frame.**
3. **Remove the Clampers on Bottom Frame. Then, place the Bottom Frame upside down. Then, remove the PCB Holder Piece from the Bottom Frame as shown.**

Fig. 7-3-1


Bottom Frame
(Bottom side)
PCB Holder Piece

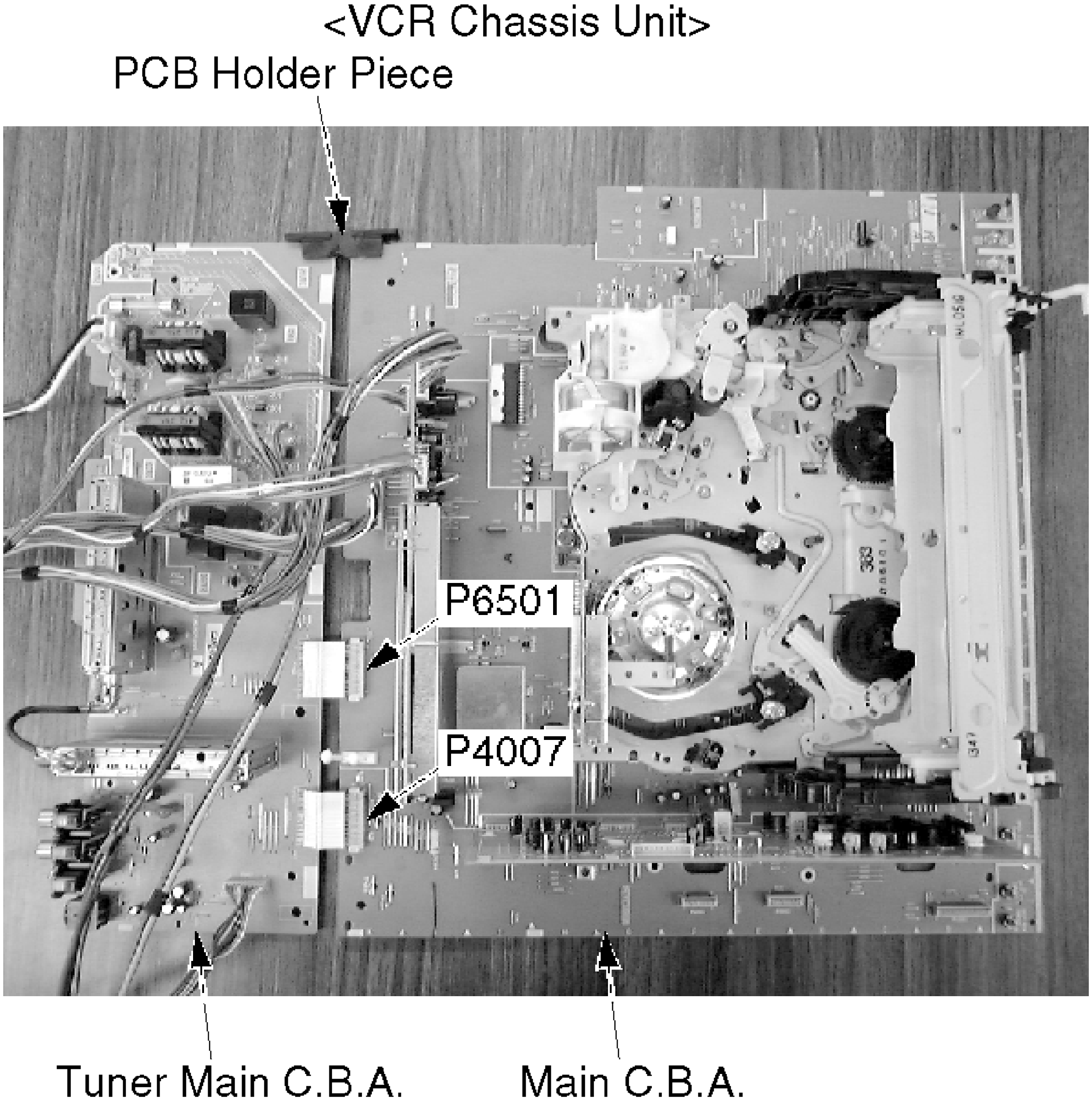

Guide ribs


Bottom Frame
(Bottom side)

4. Place the VCR Chassis Unit and Tuner Main C.B.A. on the Table. Then, connect the Connector P4007 and P6501.

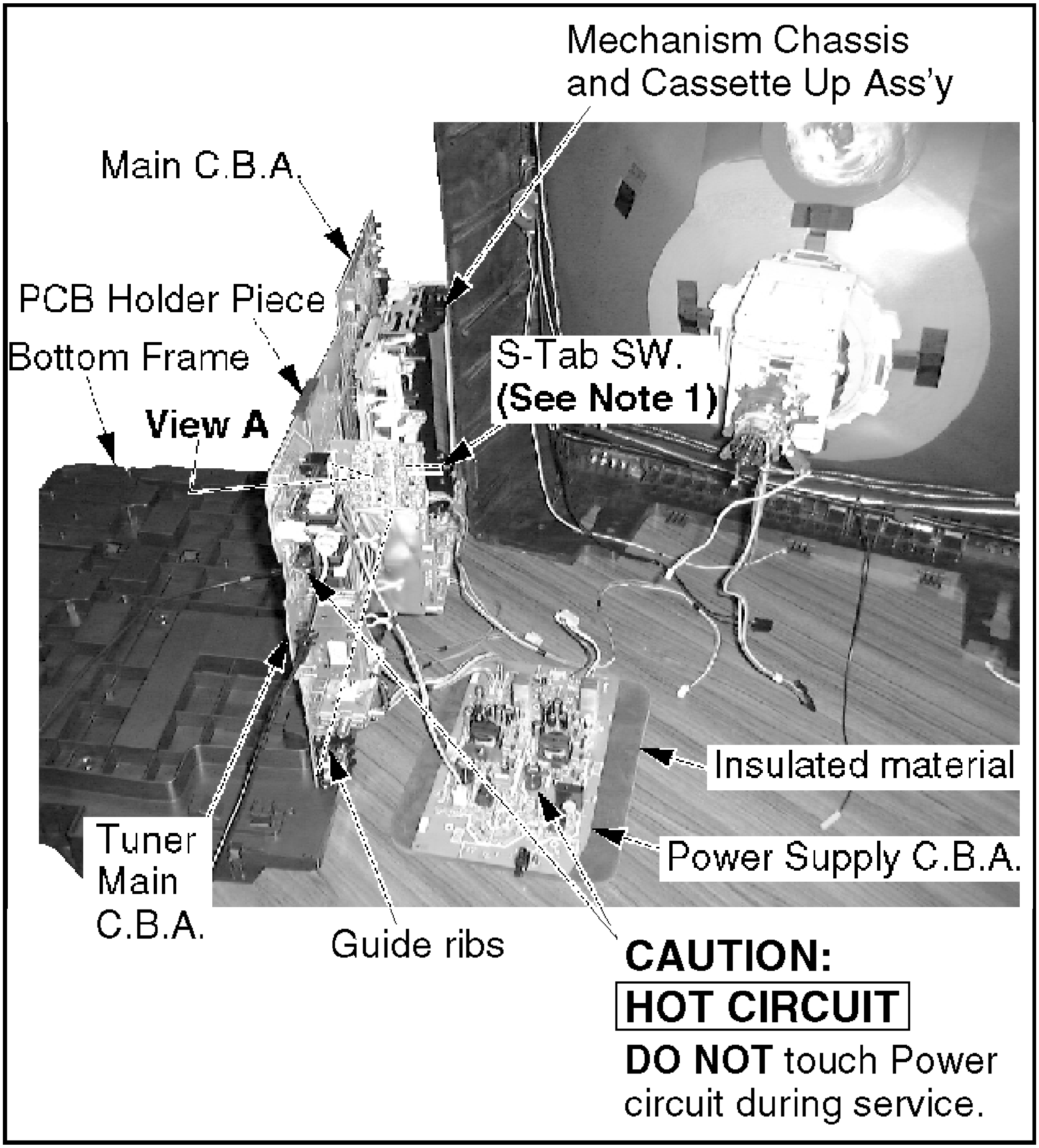
5. In order to stabilize C.B.A.s, attach the PCB Holder Piece to both C.B.A.s. as shown.

Fig. 7-3-2


<VCR Chassis Unit>
PCB Holder Piece
P6501
P4007
Tuner Main C.B.A.
Main C.B.A.

6. Place it along with Guide ribs on the Bottom Frame as shown.

Fig. 7-3-3


Mechanism Chassis and Cassette Up Ass'y
Main C.B.A.
PCB Holder Piece
Bottom Frame
View A
S-Tab SW.
(See Note 1)
Insulated material
Power Supply C.B.A.
Tuner Main C.B.A.
Guide ribs
CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.

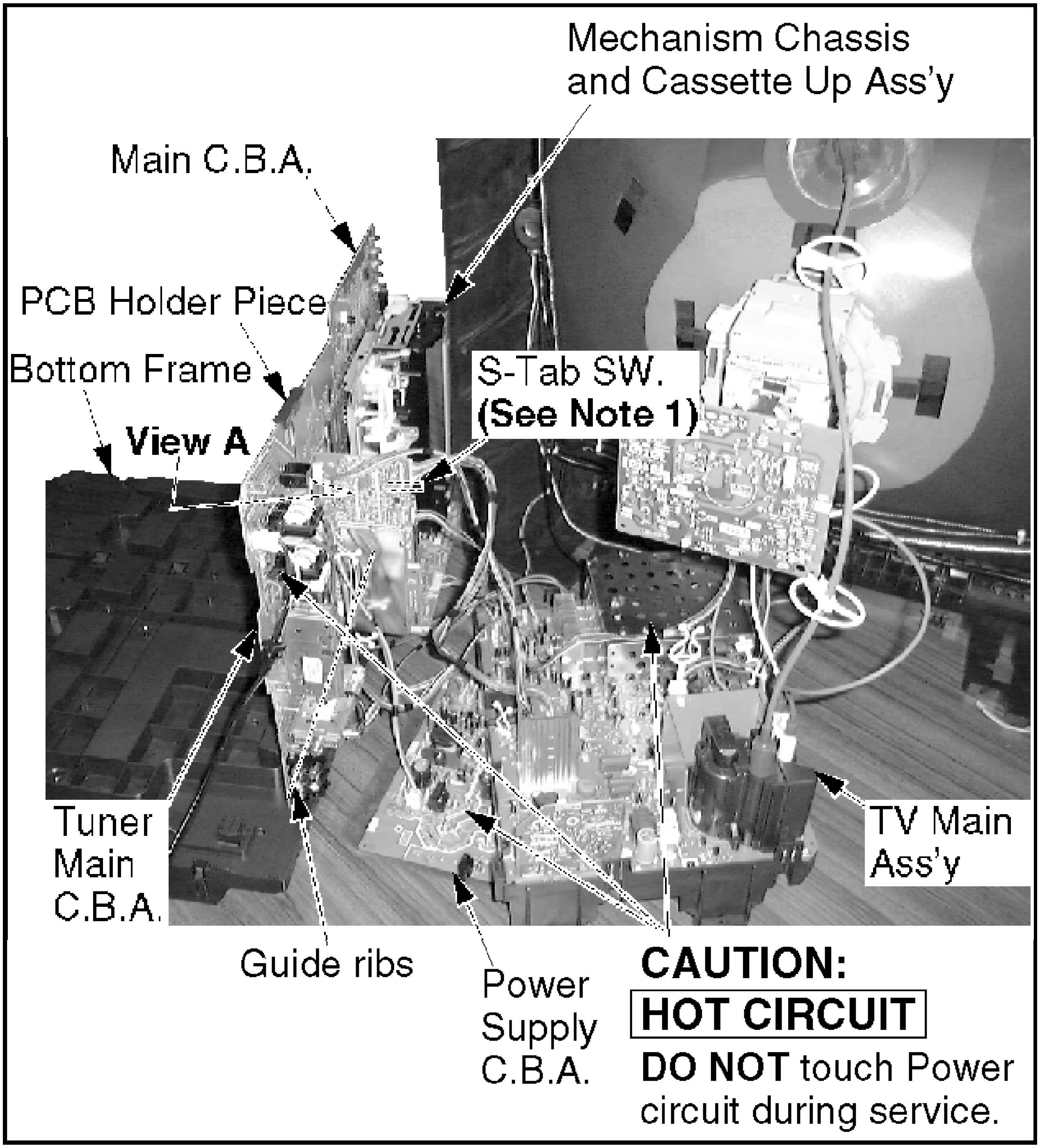
5.1.8.1.4. Service Position (3-2)

If it is necessary to use the TV Monitor, connect the TV Main Ass'y to the VCR Chassis Unit as follows.

1. Perform steps 1~4 of Service Position (3-1) in the same way.

2. Place the TV Main Ass'y as shown.

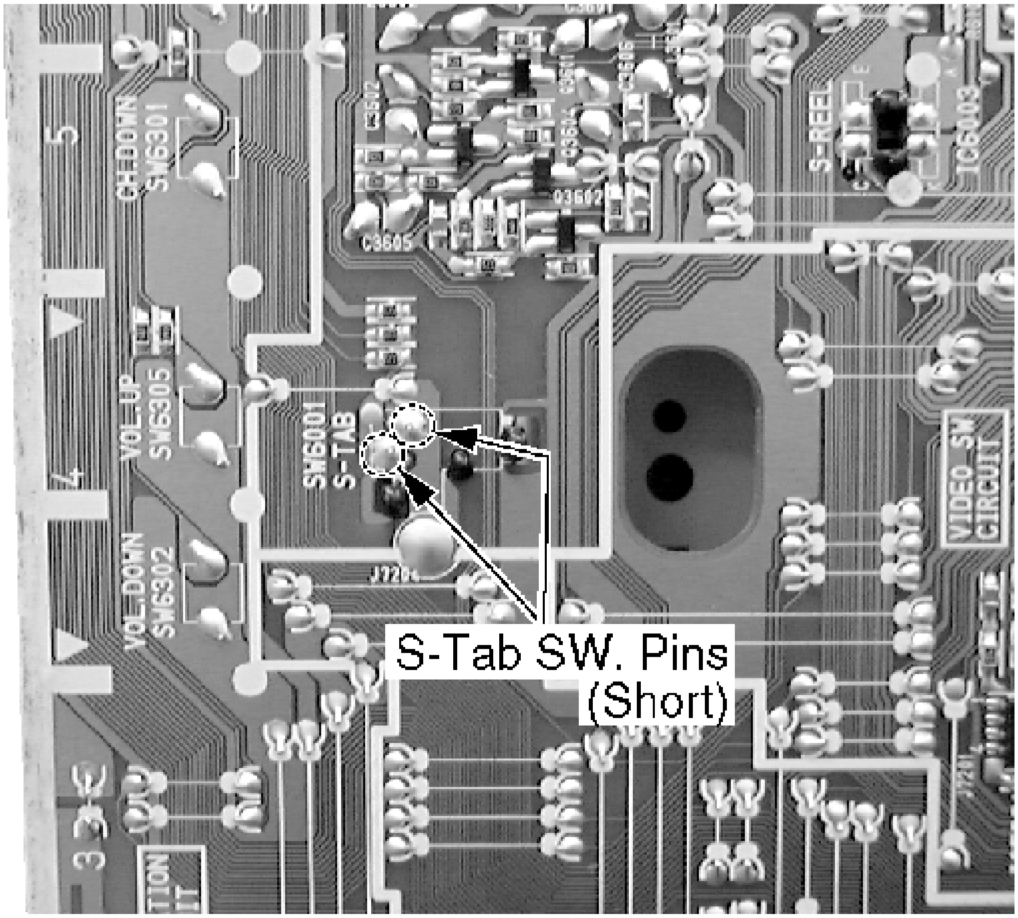
Fig. 7-3-4


Mechanism Chassis and Cassette Up Ass'y
Main C.B.A.
PCB Holder Piece
Bottom Frame
View A
S-Tab SW.
(See Note 1)
Tuner Main C.B.A.
TV Main Ass'y
Guide ribs
Power Supply C.B.A.
CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.

Note:

1. **It is possible that the S-Tab SW. may not work correctly in Service Positions (3-1) and (3-2). (Recording can not be done). In this case, short the S-Tab SW. Pins on the foil side of Main C.B.A. to turn this SW. on.**

Fig. 7-3-5


CH-DOWN
SW6301
VOL UP
SW6305
VOL DOWN
SW6302
SW6001
S-TAB
C3605
Q3602
S-REEL
IC6003
J7204
VIDEO SW
CIRCUIT
S-Tab SW. Pins
(Short)

View A Main C.B.A. (foil side)

Alternative method:
Cover the S-Tab SW. with masking tape.

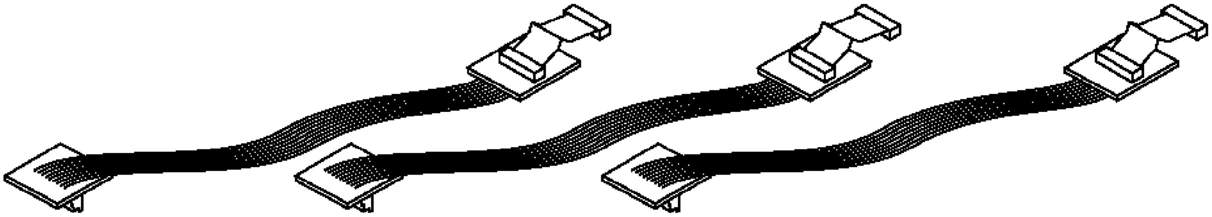
2. When disassembling/assembling, refer to "CABINET SECTION" in DISASSEMBLY/ ASSEMBLY PROCEDURES.

5.1.8.1.5. Service Position (4)

In Service Position (4), the DVD Decoder C.B.A. with Extension Cable (LSUA0031) X3 and Connector Cable (IDE Cable) (Not supplied) can be performed.

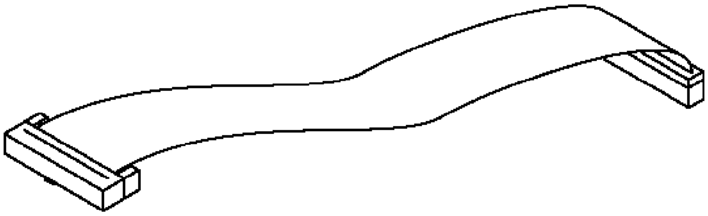
Fig. 7-4-1

Extension Cable (LSUA0031) 3pcs



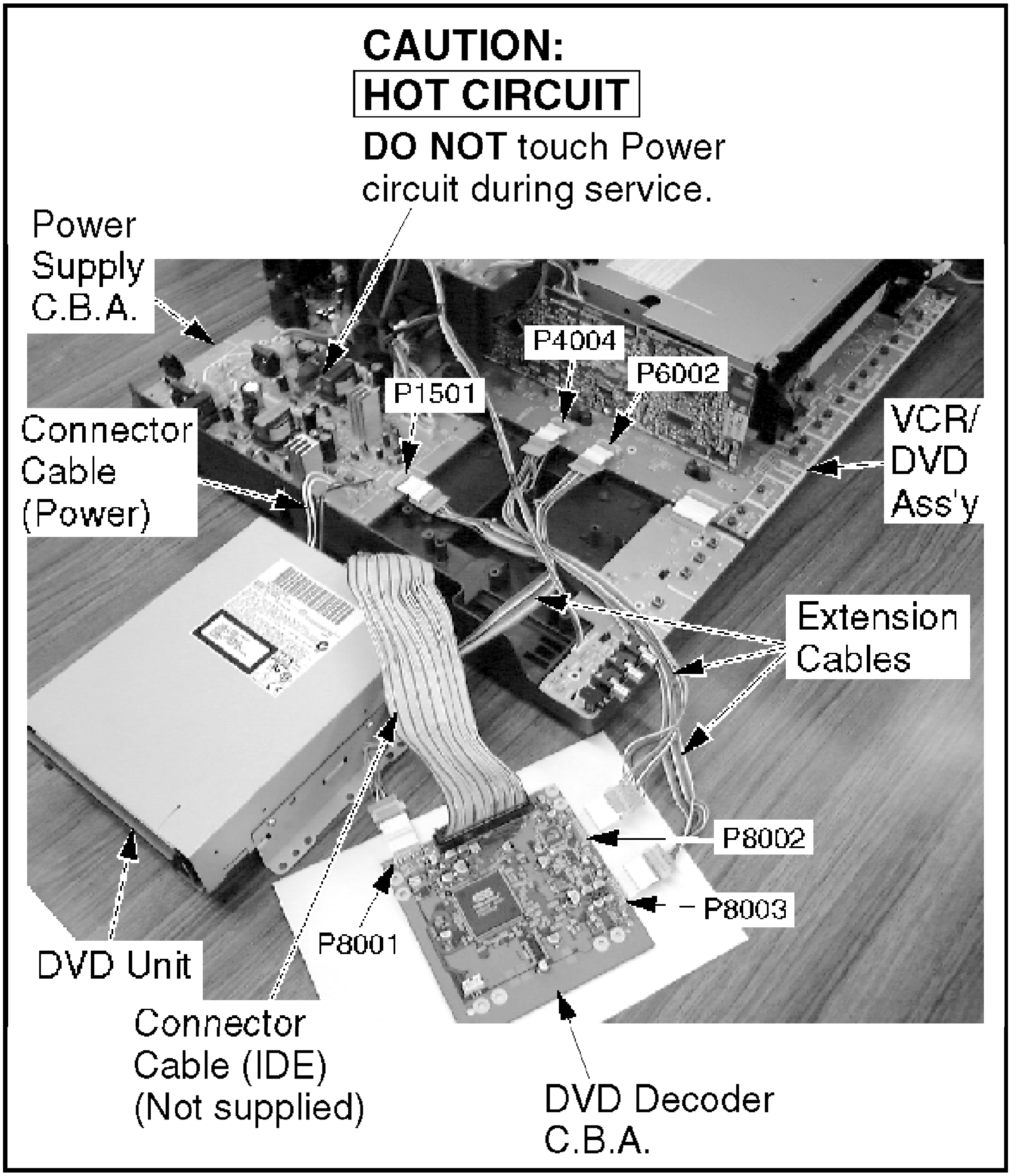
Connector Cable (IDE Cable)

Not supplied
(Purchase locally)



1. **Remove the Rear Cover and the VCR/DVD Ass'y.**
2. **Remove the DVD Unit and the DVD Decoder C.B.A.**
   Note:
   Remove the original Connector Cable (IDE) from the DVD Unit. (The original Connector Cable (IDE) is not used in this position.)
3. **Connect the Connector Cable (Power) and the Connector Cable (IDE Cable) to the DVD Unit from the DVD Decoder C.B.A.**
4. **Connect the 3 Extension Cables as follows:**
   - **P8001 on the DVD Decoder C.B.A. to P1501 on the Power Supply C.B.A.**
   - **P8002 on the DVD Decoder C.B.A. to P4004 on the Main C.B.A.**
   - **P8003 on the DVD Decoder C.B.A. to P6002 on the Main C.B.A.**

Fig. 7-4-2


CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.
Power Supply C.B.A.
Connector Cable (Power)
P1501
P4004
P6002
VCR/ DVD Ass'y
Extension Cables
P8002
P8003
P8001
DVD Unit
Connector Cable (IDE) (Not supplied)
DVD Decoder C.B.A.

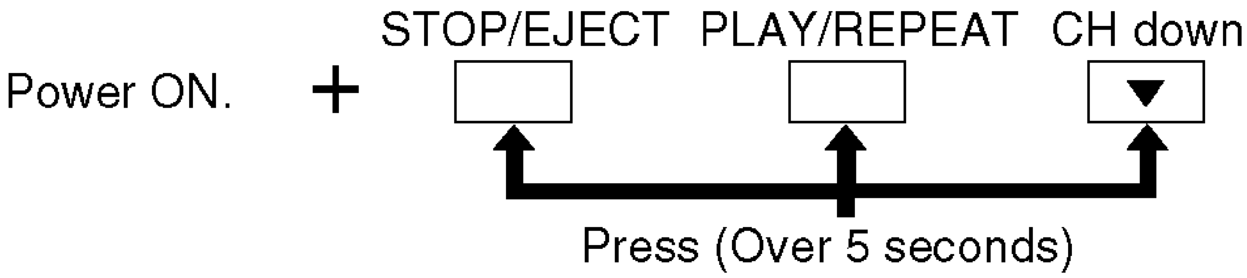
5.1.9. HOT CIRCUIT

Primary circuit exists on the Power Supply C.B.A., TV Main C.B.A., and Tuner Main C.B.A.
This circuit is identified as " HOT " on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

5.1.10. SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press and hold STOP/EJECT, PLAY/REPEAT, and CH down buttons of VCR operation panel on the unit together over 5 seconds in power on condition.

Fig. 8



The unit goes into service mode.
In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.
To release from this mode, press POWER button off or disconnect AC Plug.

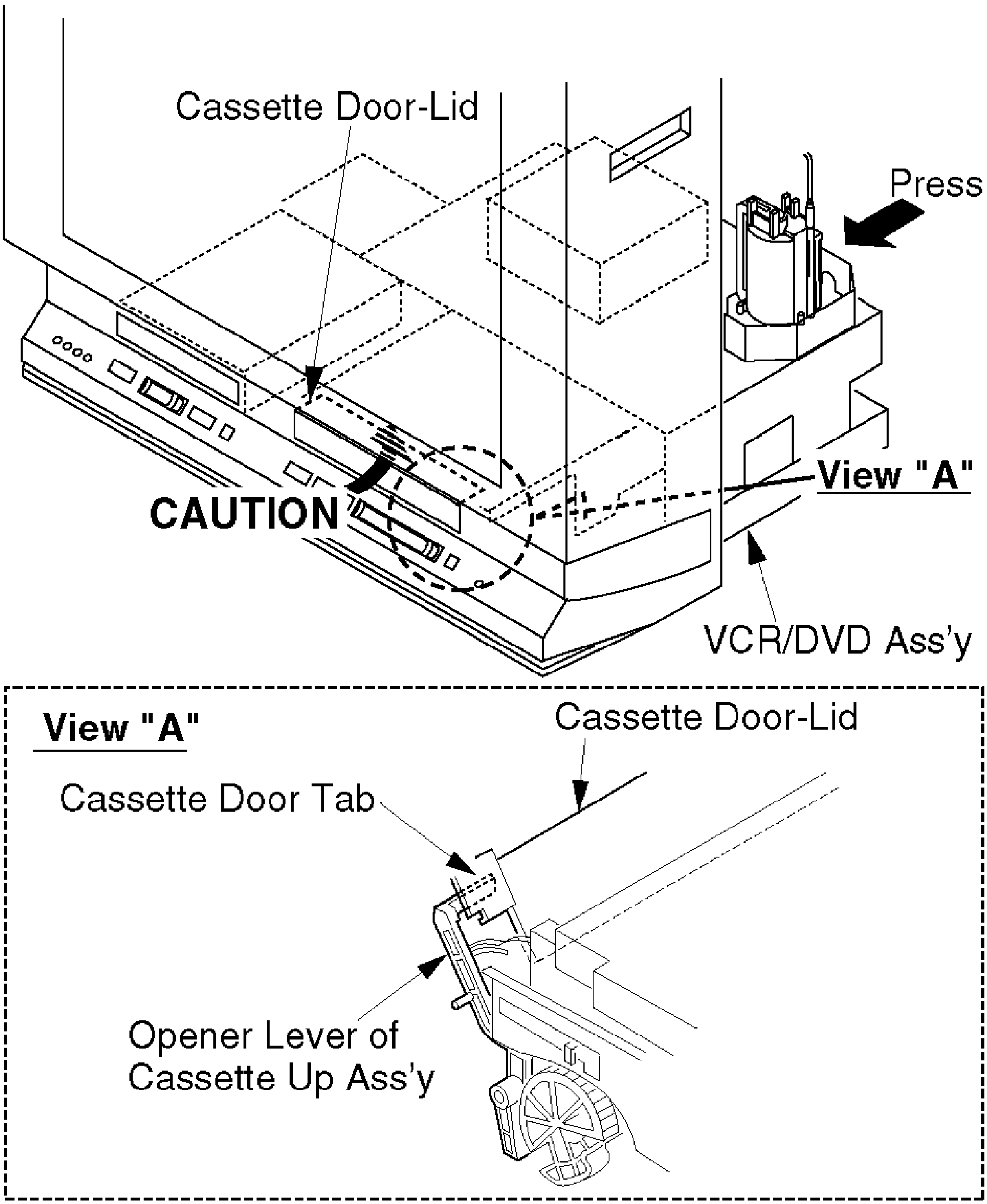
5.1.11. CAUTION FOR INSTALLATION OF VCR/DVD ASS'Y

CAUTION:

Opener Lever may be damaged when VCR/DVD Ass'y is installed, with Cassette Door-Lid and Opener Lever of Cassette Up Ass'y set incorrectly.
Install the VCR/DVD Ass'y as follows:

1. **Swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.**
2. **Make sure that all guide tabs are aligned properly. Then, press the VCR/DVD Ass'y straight in.**

Fig. 9


Cassette Door-Lid
Press
CAUTION
View "A"
VCR/DVD Ass'y
View "A"
Cassette Door-Lid
Cassette Door Tab
Opener Lever of
Cassette Up Ass'y

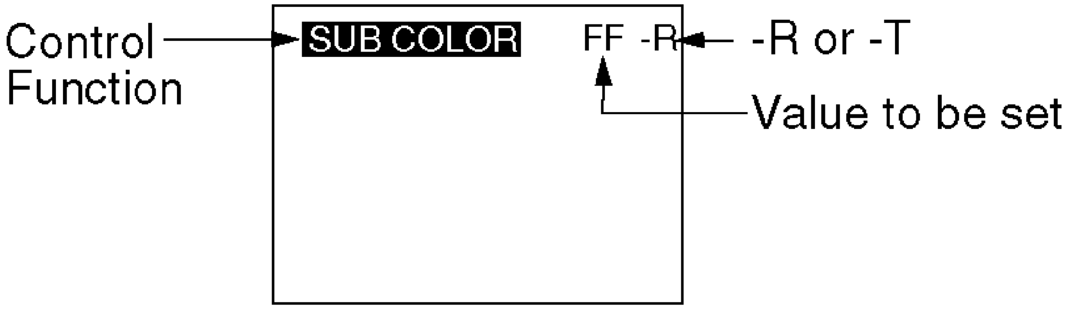
5.1.12. HOW TO INITIALIZE MEMORY IC

After the Memory IC (IC6004) or Main C.B.A. is replaced, be sure to set the Default value to Memory IC as shown in "Memory IC Reference Table" below.

1. Set the unit to TV/VCR Mode.

2. Press and hold STOP/EJECT, PLAY/REPEAT, and VOL- buttons of VCR operation panel on the unit together over 5 seconds with no cassette inserted. The adjustment overlay will appear to Enter EVR Adjustment mode.

Fig. 10-1



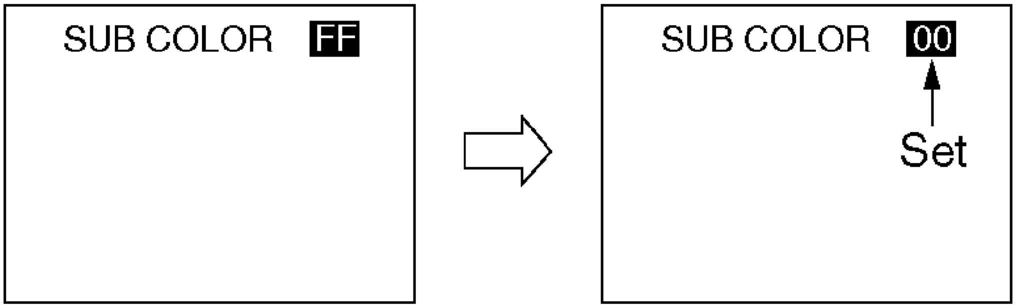
Note:
This model has two Tuners.
Default values for -R and -T are same value.
-R: UHF/VHF TUNER /TV DEMODULATOR 1 UNIT
-T: UHF/VHF TUNER /TV DEMODULATOR 2 UNIT

3. Set the Default value of all Control functions using a remote control as shown in "Memory IC Reference Table."

Note:

For Selecting Control functions and setting Default value, refer to "HOW TO ENTER EVR ADJUSTMENT MODE" in ELECTRICAL ADJUSTMENT procedures.

Fig. 10-2



4. Press and hold STOP/EJECT, PLAY/REPEAT, and VOL- buttons of VCR operation

panel on the unit together over 5 seconds again or press the POWER button OFF to release EVR Adjustment mode. The Default value will be written to Memory IC (IC6004).

5. Perform all EVR Adjustments. (Refer to "EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL" in ELECTRICAL ADJUSTMENT procedures.)

5.1.13. EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL

This unit has electronic technology using I2C Bus concept.
The following control functions are adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).
Control functions which are indicated in EVR ADJUSTMENT MODE will be changed on running change basis.Control functions are inter changeable for early products and later products.

Note:

Write the original value to MEMO column before adjustment.

EARLY PRODUCTS

Do not change the value of data except Bold-faced letters.

Control functions	Range	Default	MEMO
SUB COLOR	C0-FF,00-3F	00	
VV COLOR	E0-FF,00-20	07	
LINE COLOR	E0-FF,00-20	00	
NML COLOR DIF	C0-FF,00-3F	05	
THT COLOR INI	00-3F	1D	
NT COLOR INI	00-3F	20	
SUB TINT	C0-FF,00-3F	05	
VV TINT	E0-FF,00-20	00	
LINE TINT	E0-FF,00-20	00	
NML TINT DIF	C0-FF,00-3F	00	
THT TINT INI	02-3E	20	
NT TINT INI	02-3E	20	
SUB BRIGHT	80-FF,00-7F	1F	
NML BRIGHT DIF	C0-FF,00-3F	00	
THT BRIGHT INI	00-3F	21	
NT BRIGHT INI	00-3F	16	
SUB CONTRAST	81-00	E2	
NML CONT DIF	81-00	00	
THT CONT INI	00-3F	11	
NT CONT INI	00-3F	19	
SUB SHARPNESS	C0-FF,00-3F	06	
VV SHARPNESS	E0-FF,00-20	00	
R CUT	000-3FC	0F0	
G CUT	001-0FF	07	
B CUT	000-3FC	0F0	
R DRV	00-7E,98-FE	7F	
B DRV	01-7F,97-FF	7F	
V HET	00-7F	48	
H PIN	00-3F	14	
H WID	00-3F	1F	
SW1	00-7F	28	
SW2	00-FD	05	
PROVLR	00-07	04	
BLACK GAIN	00-0F	0F	
WHITE r GAIN	00-0F	06	
WHITE r LEVEL	00-0F	0A	
BLACK SLOPE	00-07	08	
DL CODL AXIS	00-1F	15	
DECODE GAIN	00-3F	1C	
C-Y RATE	00-03	01	
CHARA CORRECT	00-0F	05	
CHARA SLICE	00-0F	09	
H-POS	00-1F	0D	
V-SCR	00-3F	2F	
V-LIN	00-3F	21	
V POS	00-3F	20	
H-KEY	00-3F	20	
H-BPN	00-0F	05	
H-TPN	00-0F	04	
V-EHT	00-0F	05	
H-EHT	00-0F	06	
TV SHP	80-FF,00-7F	0E	
LINE SHP	80-FF,00-7F	00	
PB SHP	80-FF,00-7F	01	
NML SHARP DIF	C0-FF,00-3F	00	
THT SHARP INI	00-3F	1F	
NT SHARP INI	00-3F	20	
TV CLIP	00-FD	07	
LINE CLIP	00-FD	67	
PB CLIP	00-FD	07	
TV SSW	00-40	00	
LINE SSW	00-40	00	
PB SSW	00-40	40	
S SSW	00-40	40	
TV LIM	00-3F	10	
LINE LIM	00-3F	10	
PB LIM	00-3F	10	
TV COR	00-3F	06	
LINE COR	00-3F	06	
PB COR	00-3F	0C	
TV DLAY	00-7F	44	
LINE DLAY	00-7F	45	

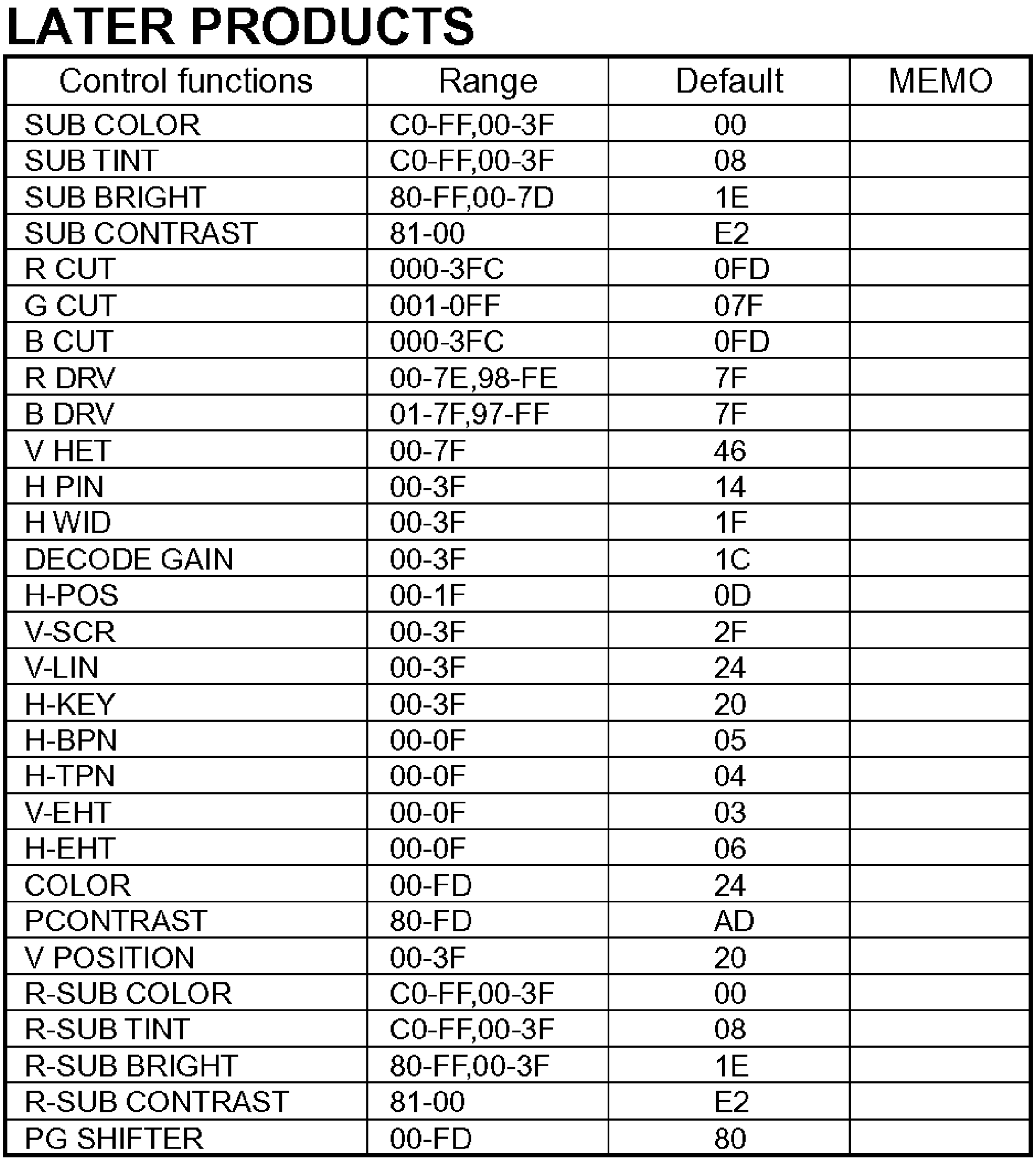
Control functions	Range	Default	MEMO
PB DLAY	00-7F	69	
S DL	00-7F	47	
TV VMLM	00-FD	92	
LINE VMLM	00-FD	94	
PB VMLM	00-FD	81	
TV VMCO	00-3F	13	
LINE VMCO	00-3F	13	
PB VMCO	00-3F	06	
ANR	00-FD	85	
PIC	00-FD	82	
NML BASS INI	00-0C	00	
MOV BASS INI	F4-FF,00-0C	03	
MSC BASS INI	F4-FF,00-0C	03	
SPC BASS INI	F4-FF,00-0C	00	
ACC BASS	00-0C	00	
VV BASS	00-0C	03	
NML TREBLE INI	00-0C	00	
MOV TREBLE INI	F4-FF,00-0C	00	
MSC TREBLE INI	F4-FF,00-0C	03	
SPC TREBLE INI	F4-FF,00-0C	FC	
ACC TREBLE	00-0C	01	
SUR EFFECT	00-0F	08	
FREE RUN	00-01	00	
NA VXA	00-FD	96	
NB VXA	00-FD	17	
NC VXA	00-FD	17	
ND VXA	00-FD	95	
SA VXA	00-FD	A6	
SB VXA	00-FD	17	
SC VXA	00-FD	17	
SD VXA	00-FD	A8	
NA HXA	00-FD	63	
NB HXA	00-FD	63	
NC HXA	00-FD	06	
ND HXA	00-FD	06	
SA HXA	00-FD	72	
SB HXA	00-FD	72	
SC HXA	00-FD	06	
SD HXA	00-FD	06	
COLOR	00-FD	21	
VCOLOR	00-FD	00	
TINT	00-FD	2B	
PCONTRAST	80-FD	AD	
VCONTRAST	80-FD	88	
BHM	00-FD	22	
DG START	00-3F	00	
YD	00-0F	04	
ADL	00-0F	05	
Y-OFFSET	80-8F	81	
DGY	40-4F	44	
SYNC DELAY	00-03	00	
SHIFT Y	00-FD	1A	
L-LEVEL	00-FD	1A	
NYC	00-05	00	
V POSITION	00-3F	20	
DVD COLOR	E0-FF,00-20	00	
DVD TINT	E0-FF,00-20	00	
DVD SHP	80-FF,00-7D	08	
DVD CLIP	00-FD	67	
DVD SSW	00-40	40	
DVD LIM	00-3F	10	
DVD COR	00-3F	0B	
DVD DLAY	00-7F	46	
DVD VVLM	00-FD	92	
DVD VVCO	00-3F	13	
R-SUB COLOR	C0-FF,00-3F	00	
R-SUB TINT	C0-FF,00-3F	08	
R-SUB BRIGHT	80-FF,00-7F	1E	
R-SUB CONTRAST	81-00	E2	
FMANT	00-01	01	
S VVCO	00-3F	13	
BLUE BRIGHT	C0-FF,00	20	
BLUE CONTRAST	C0-FF,00	00	
TVR TREBLE	00-0C	03	
PG SHIFTER	00-FD	80	

Bold faced letters ► Control functions which need to be adjusted.

Only control functions (29 items) which are needed to adjust in field service are indicated by On Screen Displays.

Note:

Write the original value to MEMO column before adjustment.



LATER PRODUCTS

Control functions	Range	Default	MEMO
SUB COLOR	C0-FF,00-3F	00	
SUB TINT	C0-FF,00-3F	08	
SUB BRIGHT	80-FF,00-7D	1E	
SUB CONTRAST	81-00	E2	
R CUT	000-3FC	0FD	
G CUT	001-0FF	07F	
B CUT	000-3FC	0FD	
R DRV	00-7E,98-FE	7F	
B DRV	01-7F,97-FF	7F	
V HET	00-7F	46	
H PIN	00-3F	14	
H WID	00-3F	1F	
DECODE GAIN	00-3F	1C	
H-POS	00-1F	0D	
V-SCR	00-3F	2F	
V-LIN	00-3F	24	
H-KEY	00-3F	20	
H-BPN	00-0F	05	
H-TPN	00-0F	04	
V-EHT	00-0F	03	
H-EHT	00-0F	06	
COLOR	00-FD	24	
PCONTRAST	80-FD	AD	
V POSITION	00-3F	20	
R-SUB COLOR	C0-FF,00-3F	00	
R-SUB TINT	C0-FF,00-3F	08	
R-SUB BRIGHT	80-FF,00-3F	1E	
R-SUB CONTRAST	81-00	E2	
PG SHIFTER	00-FD	80	

5.1.14. METHOD FOR LOADING/UNLOADING OF MECHANISM

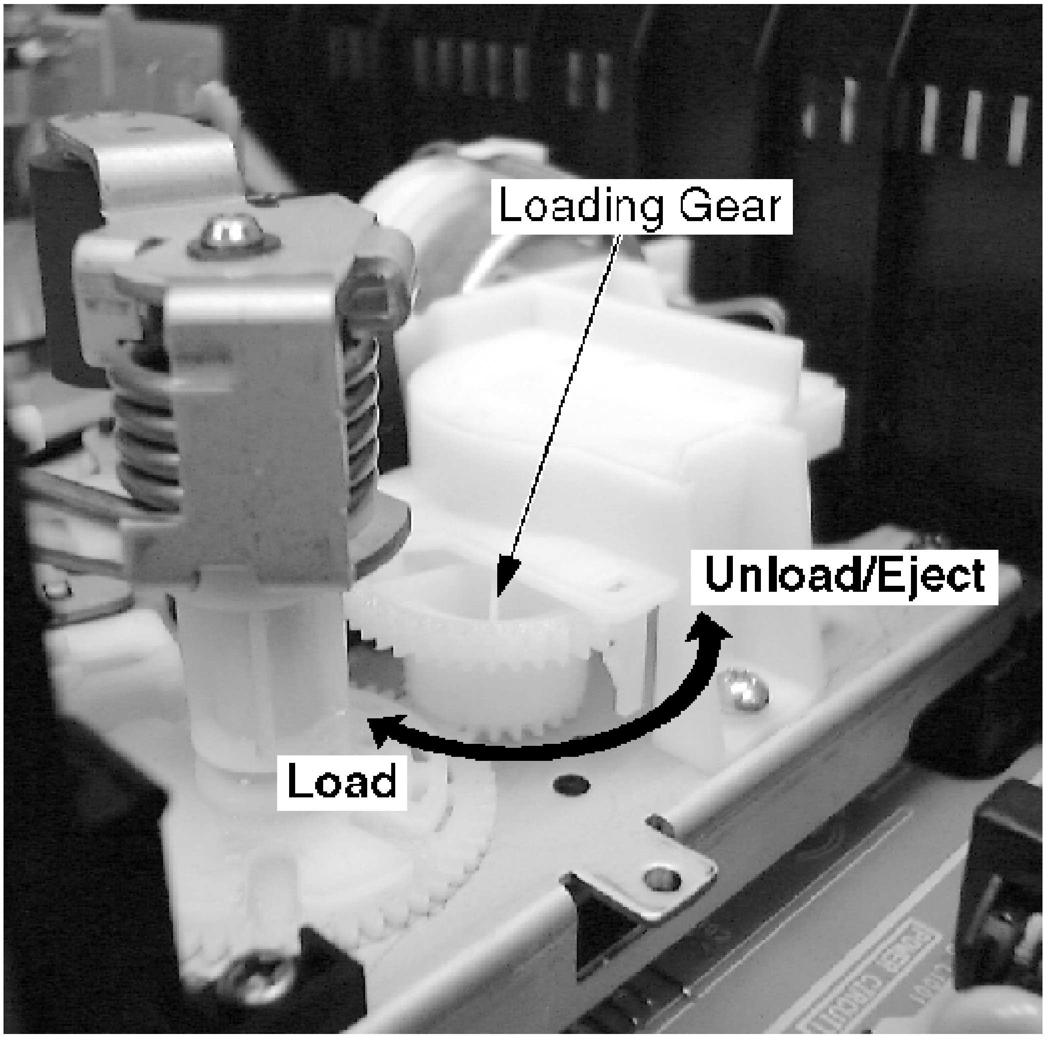
5.1.14.1. (Manual Method)

Turn the Loading Gear clockwise (for loading) or counterclockwise (for unloading) using needlenose pliers etc.

Note:

Do not use this method if Mechanism is jammed or locked.

Fig. 11-1



5.1.14.2. (Electrical Method)

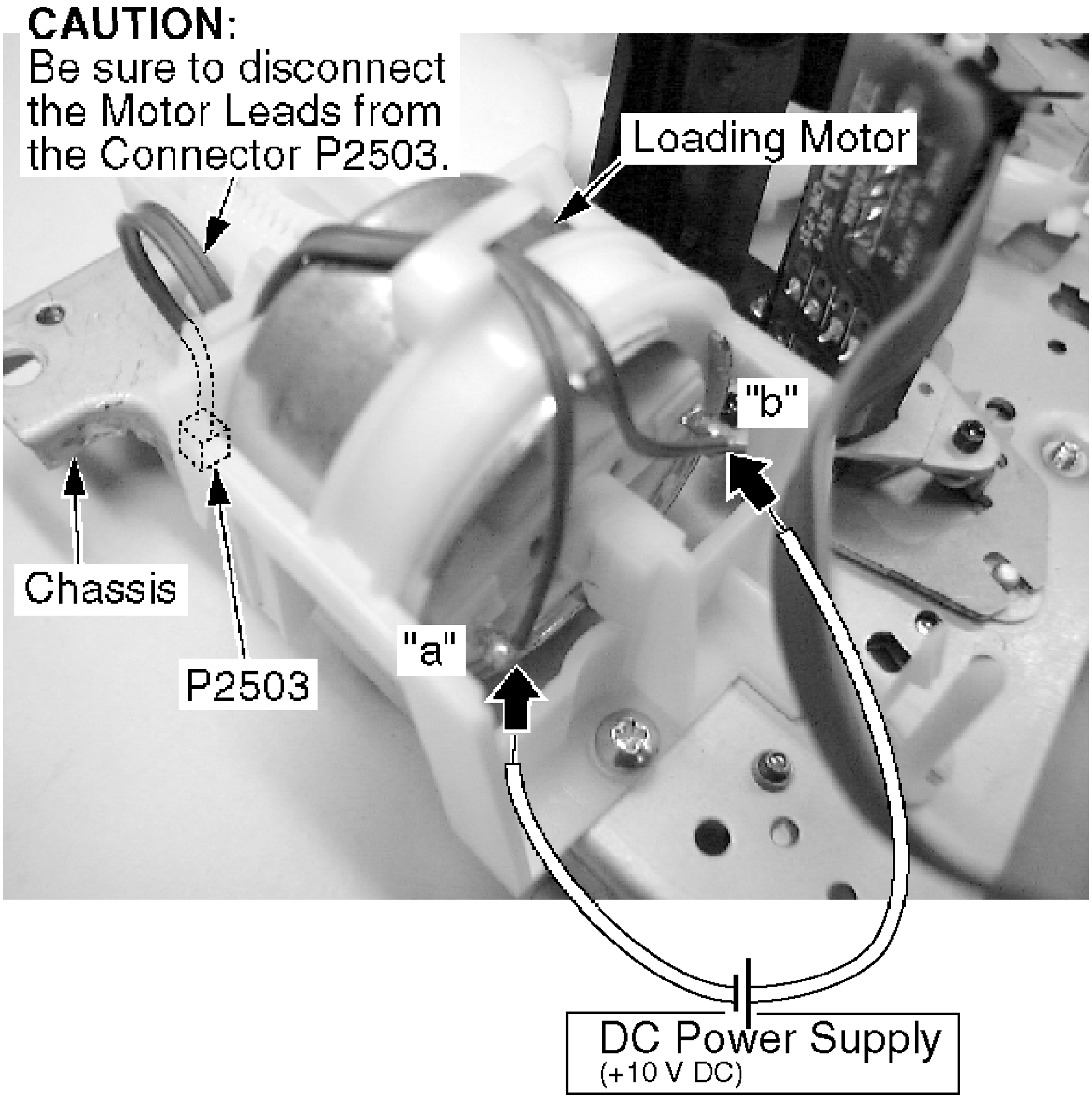
Apply +10.0 V DC Power Supply to the Loading Motor terminals.
Loading

DC + to Portion "a," DC - to Portion "b"
Unloading
DC - to Portion "a," DC + to Portion "b"

CAUTION:

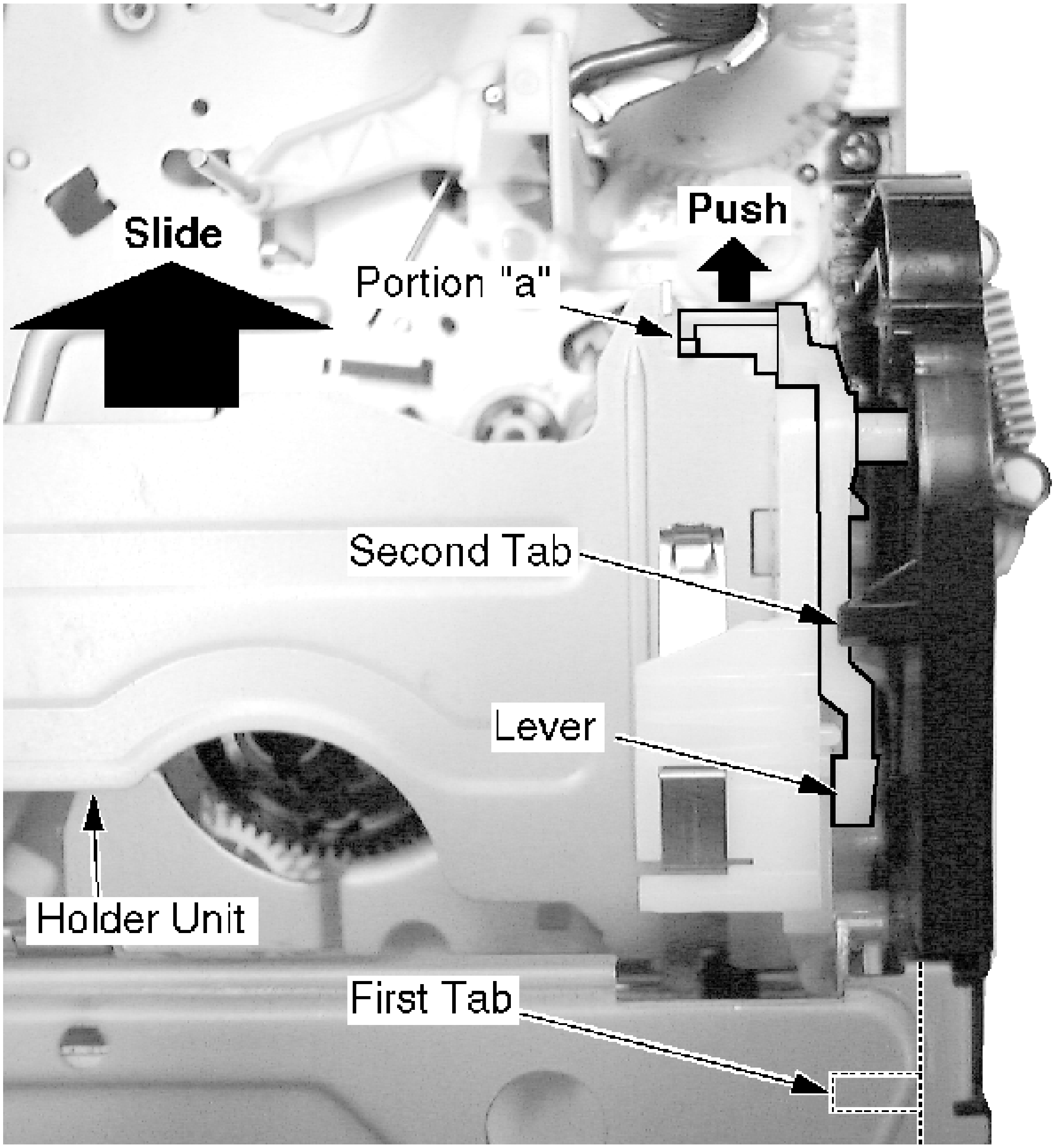
Before applying DC Power Supply, be sure to disconnect the Motor Leads from the Connector P2503.
Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.

Fig. 11-2


CAUTION:
Be sure to disconnect the Motor Leads from the Connector P2503.
Loading Motor
"b"
Chassis
P2503
"a"
DC Power Supply
(+10 V DC)

When loading without a cassette, push Portion "a" on the Holder Unit of Cassette Up Ass'y so that the Lever clear the First Tab and Second Tab.

Fig. 11-3


Slide
Push
Portion "a"
Second Tab
Lever
Holder Unit
First Tab

5.1.15. HOW TO REMOVE A JAMMED TAPE

CAUTION:

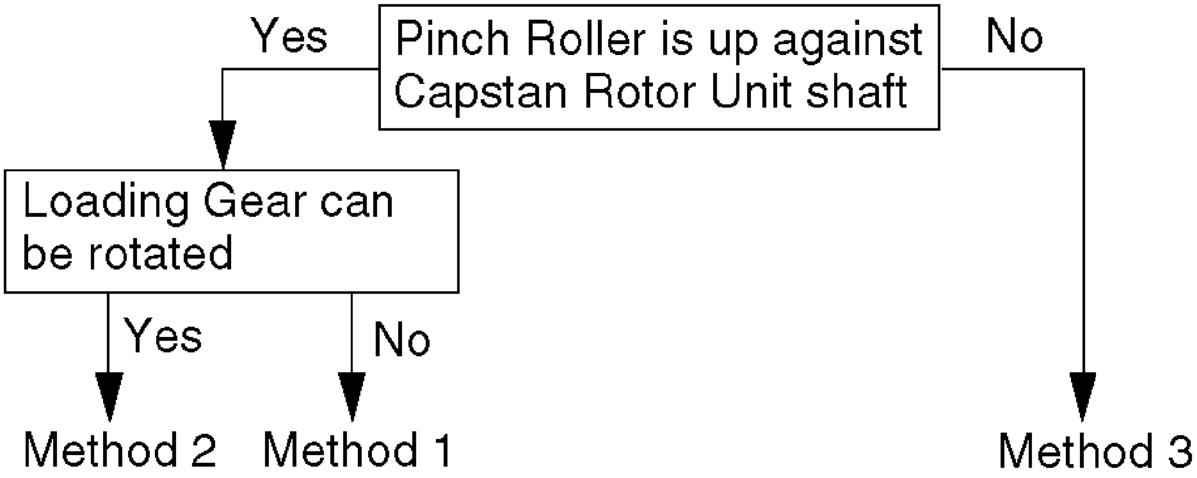
Wiper Arm Unit may be damaged or its spring may be out of place when the jammed tape is removed by force.

Remove a jammed tape as follows:

5.1.15.1. Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

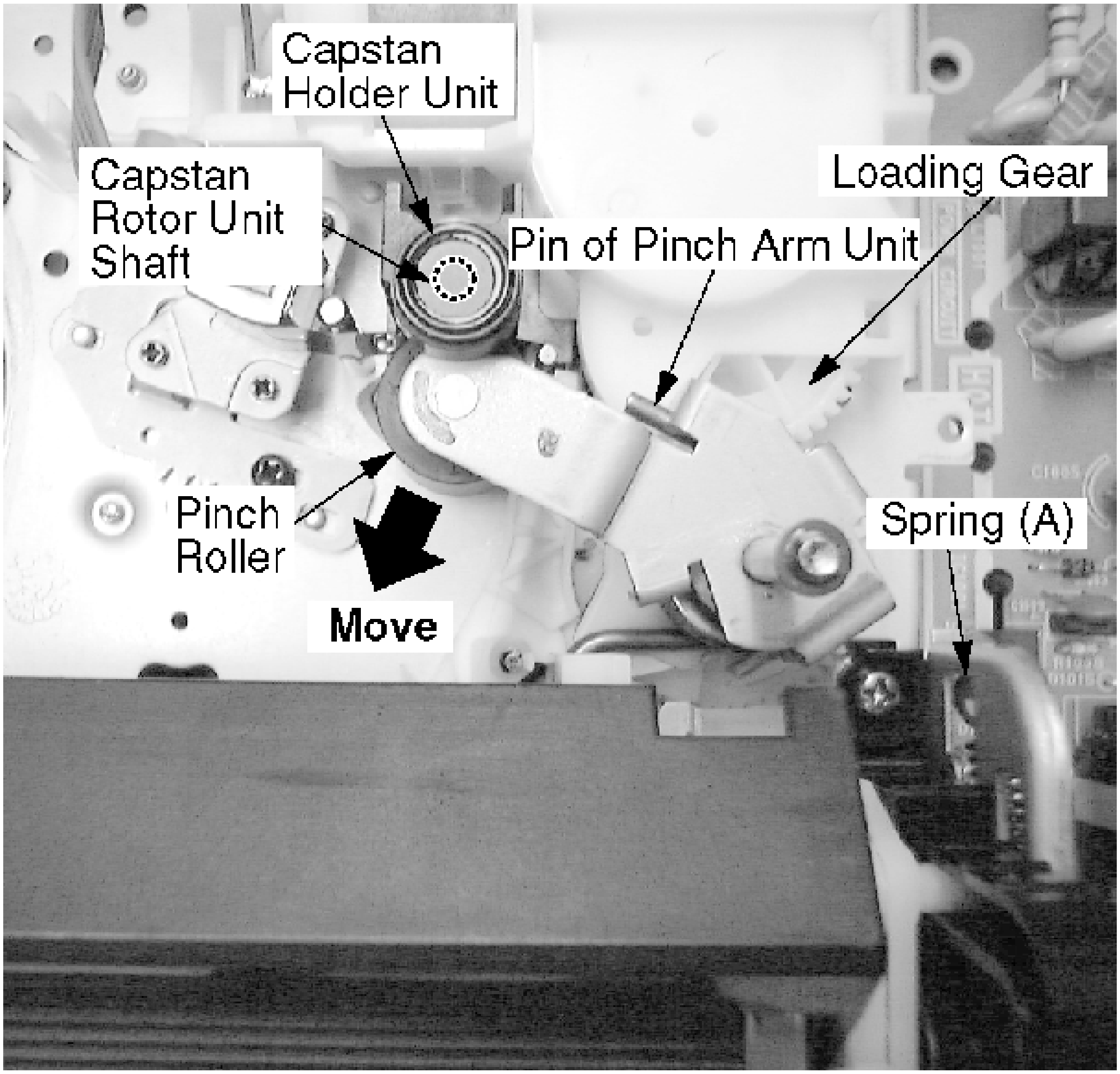
Fig. 12-1


Pinch Roller is up against Capstan Rotor Unit shaft
Yes
No
Loading Gear can be rotated
Yes
No
Method 2
Method 1
Method 3

Method -1:

1. Move the Pinch Roller Unit out by unhooking the Pin of Pinch Arm Unit so that the Pinch Roller is separated from the Capstan Rotor Unit shaft.

Fig.12-2


Capstan Holder Unit
Capstan Rotor Unit Shaft
Loading Gear
Pin of Pinch Arm Unit
Pinch Roller
Spring (A)
Move

Top View

2. Remove the tape from the tape path.

3. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.

4. Unhook Spring (A) of the Drive Rack Arm.

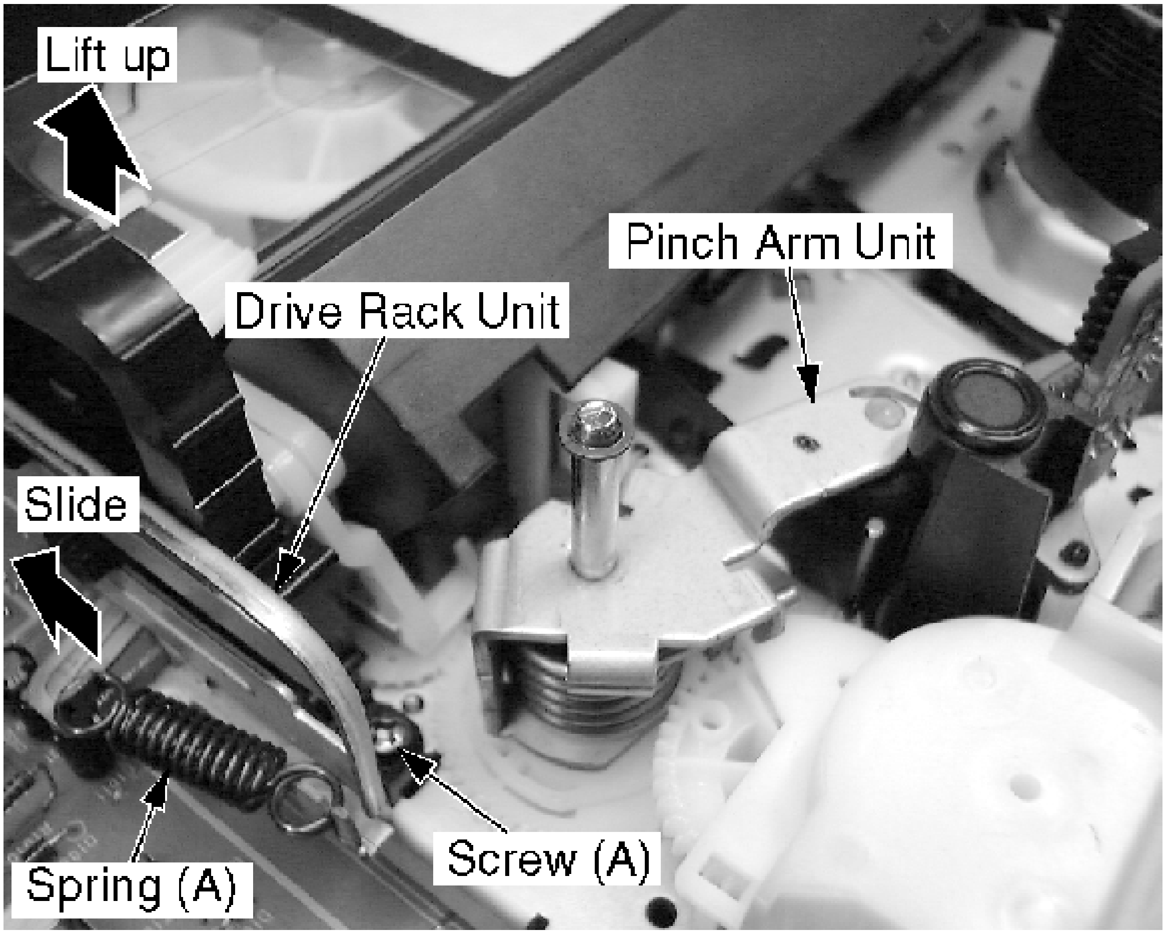
5. Remove Screw (A).

6. Lift the Cassette Up Ass’y. While pulling the Cassette Up Ass’y out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the

arrow to remove the cassette tape from the Cassette Up Ass’y.

7. Check the cause of mechanical trouble and repair.

Fig. 12-3



Method -2:

1. Rotate Loading Motor counterclockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

2. Perform Step 2 through Step 7 of Method -1.

Method -3:

1. Perform Step 2 through Step 7 of Method -1.

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass’y. (Refer to "EJECT Position Confirmation" in Disassembly/Assembly Procedures.)

5.1.15.2. Electrical Method

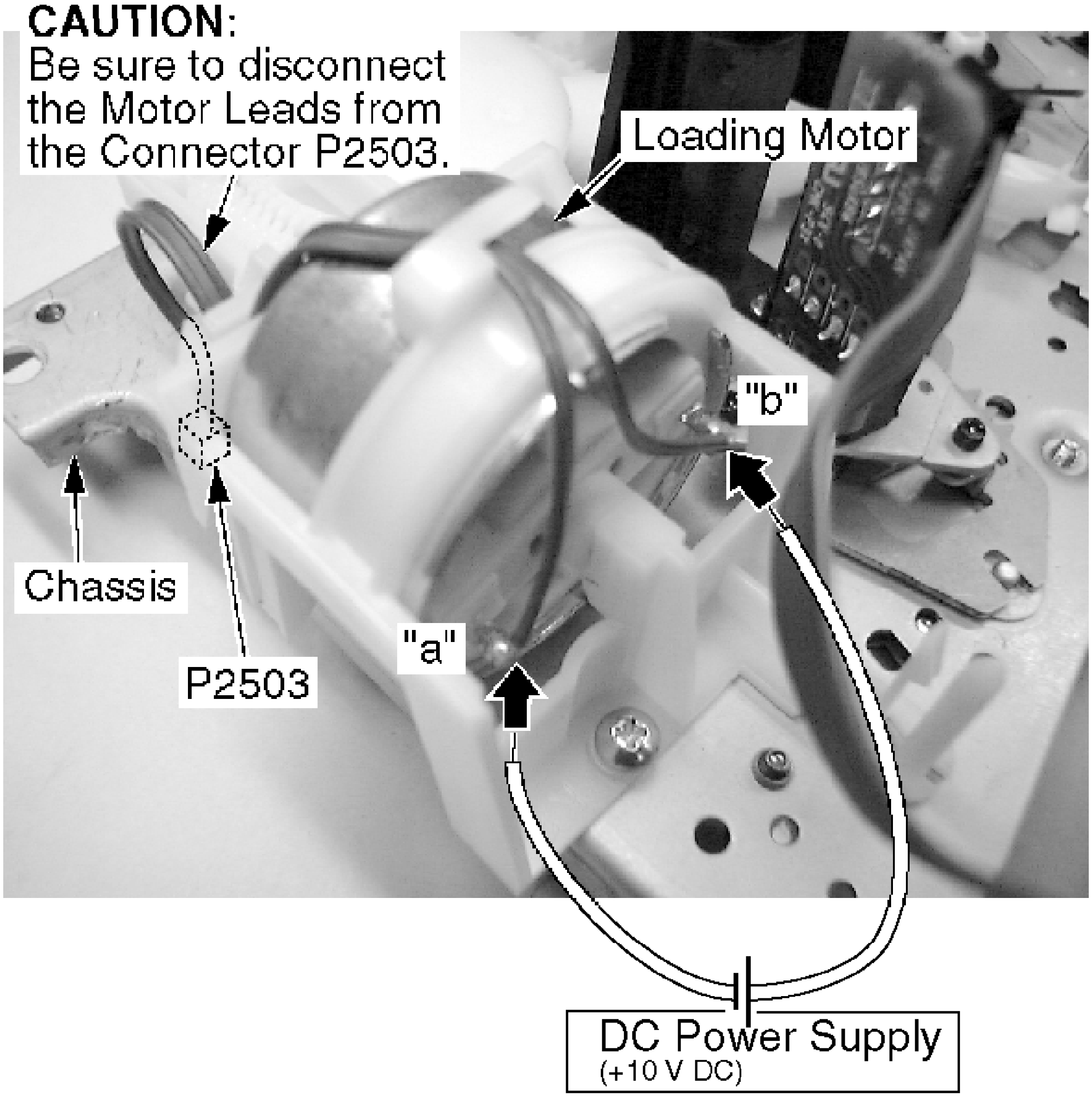
Electrical method can only be performed when the mechanism is moved by rotating the Loading Gear.

CAUTION:

- **Before applying DC Power Supply, be sure to disconnect the Motor Leads from the Connector P2503.**
  Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.
- **If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."**

1. **Be sure to disconnect the Motor Leads from the Connector P2503.**
2. **Apply +10.0 V DC Power Supply to the Loading Motor terminals.**
3. **When the Loading Posts reach the fully unloaded position, remove the Power Supply.**

Fig. 13


CAUTION:
Be sure to disconnect the Motor Leads from the Connector P2503.
Loading Motor
"b"
Chassis
P2503
"a"
DC Power Supply
(+10 V DC)

4. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.

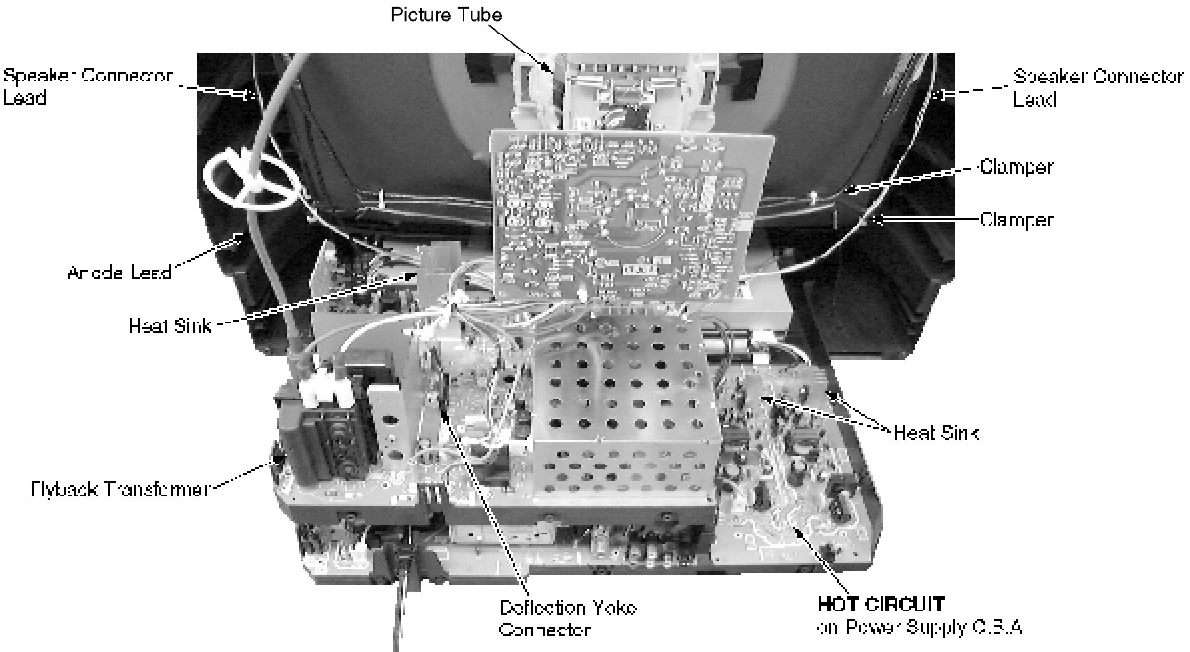
5. Eject the cassette by applying +10.0 V DC Power Supply again.

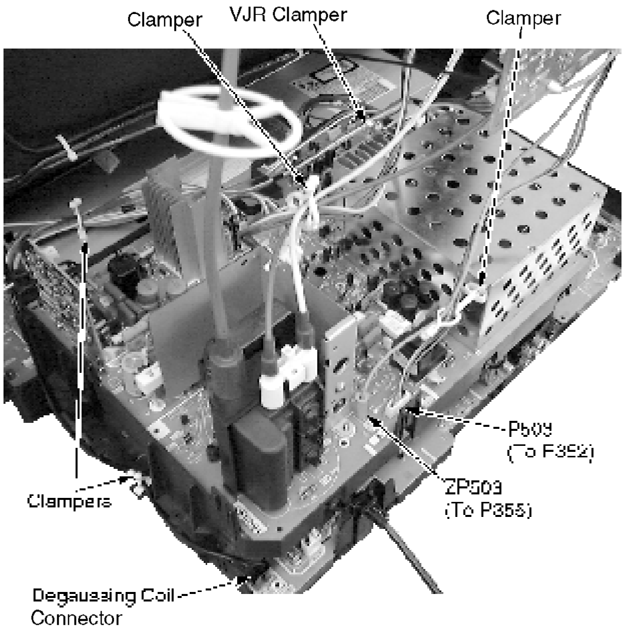
5.1.16. WIRE AND LEAD POSITION DIAGRAM

Fig. 14-1

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:
No lead wires or flat cables should touch any heating parts or the Heat Sink Plate.
Use extreme care especially for followings.


Picture Tube
Speaker Connector Lead
Speaker Connector Lead
Clamper
Clamper
Anode Lead
Heat Sink
Heat Sink
Flyback Transformer
Deflection Yoke Connector
HOT CIRCUIT
on Power Supply C.B.A


Clamper
VJR Clamper
Clamper
Clampers
P509
(To P352)
ZP503
(To P355)
Degaussing Coil Connector

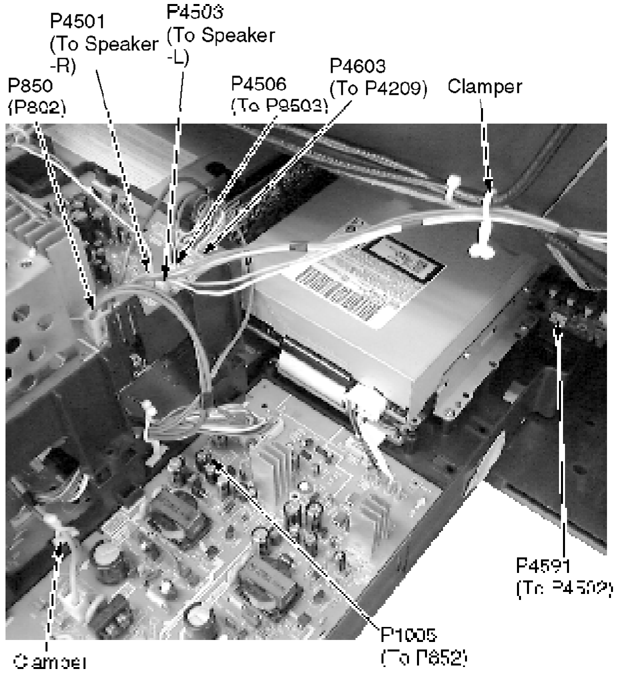
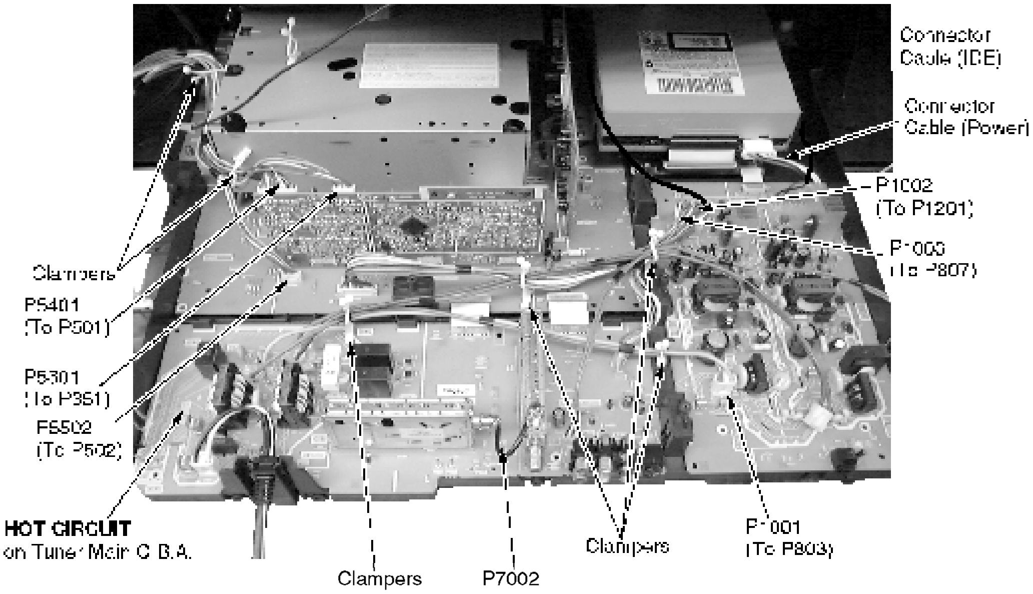
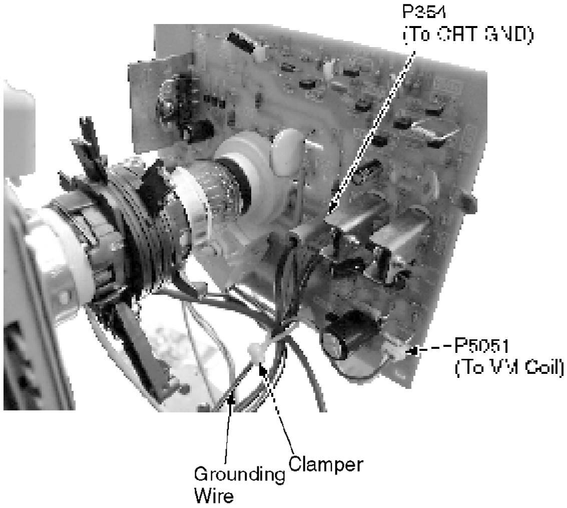

P4501
(To Speaker -R)
P4503
(To Speaker -L)
P850
(P802)
P4506
(To P9503)
P4603
(To P4209)
Clamper
P4591
(To P4502)
P1005
(To P852)
Clamper

Fig. 14-2

Note:
The following figure shows a condition when the TV Main Ass'y is removed.


Connector
Cable (IDE)
Connector
Cable (Power)
P1002
(To P1201)
P1003
(To P807)
Clampers
P5401
(To P501)
P5301
(To P351)
P5502
(To P502)
HOT CIRCUIT
on Tuner Main C.B.A.
Clampers
P7002
Clampers
P1001
(To P803)


P354
(To CRT GND)
P5051
(To VM Coil)
Grounding
Wire
Clamper

5.1.17. DEFEATING THE AUTO TRACKING

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

5.1.18. HOW TO SET TRACKING TO THE NEUTRAL POSITION

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

5.1.19. BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

5.1.20. HOW TO RESET ALL COMBINATION VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY/REPEAT and FF buttons of VCR operation panel on the unit together for more than 5 seconds.
Power will shut off.

5.1.21. HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. Connect an RF cable from the output of one unit to the input of the test unit.
2. Select corresponding RF channels.
3. Playback a recording of P.B.S. channel including clock set data and confirm this feature.

5.1.22. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing. Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

5.1.23. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

5.1.24. REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENTS

The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement

A. Soldering Iron

Use a pencil-type soldering iron that uses less than 30 W.

B. Solder

Eutectic Solder (Tin 63 %, Lead 37 %) is recommended.

C. Soldering time

Do not apply heat for more than 4 seconds.

D. Preheating

Leadless capacitor must be preheated before installation. -(266 °F ~ 302 °F) (130 °C ~150 °C) for about two minutes.

Note:

A. Leadless components must not be reused after removal.

B. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component

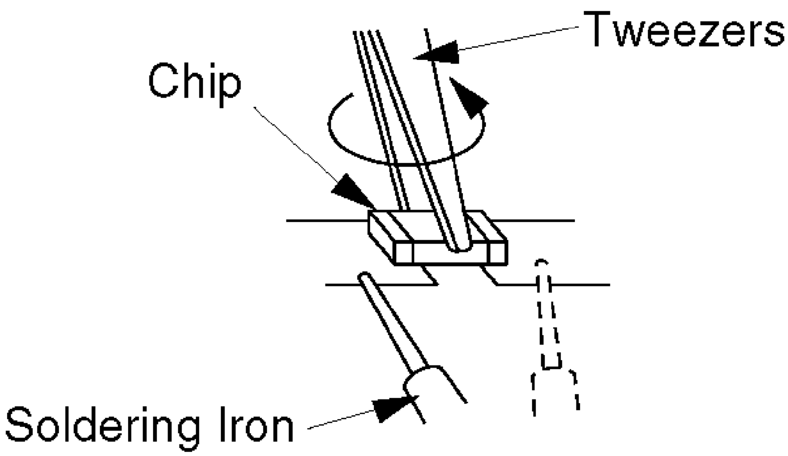
Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove the leadless component with a twisting motion.

Note:

A. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action.

B. Be careful not to break the copper foil on the printed circuit board.

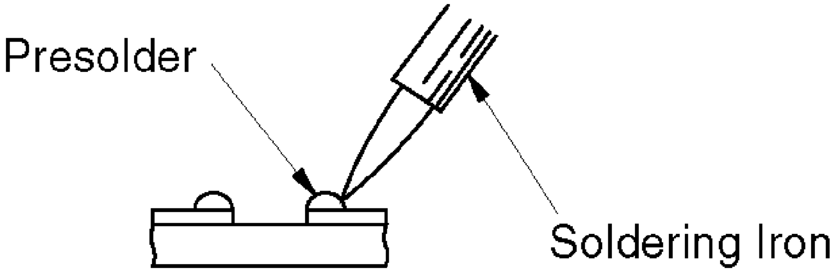
Fig. 15-1



3. Installing the leadless component

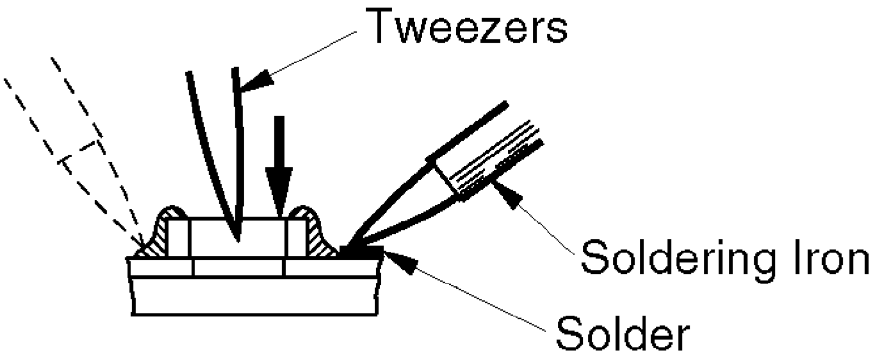
A. Presolder the contact points on the circuit board.

Fig. 15-2


Presolder
Soldering Iron

B. Press the part downward with tweezers and solder both electrodes as shown below.

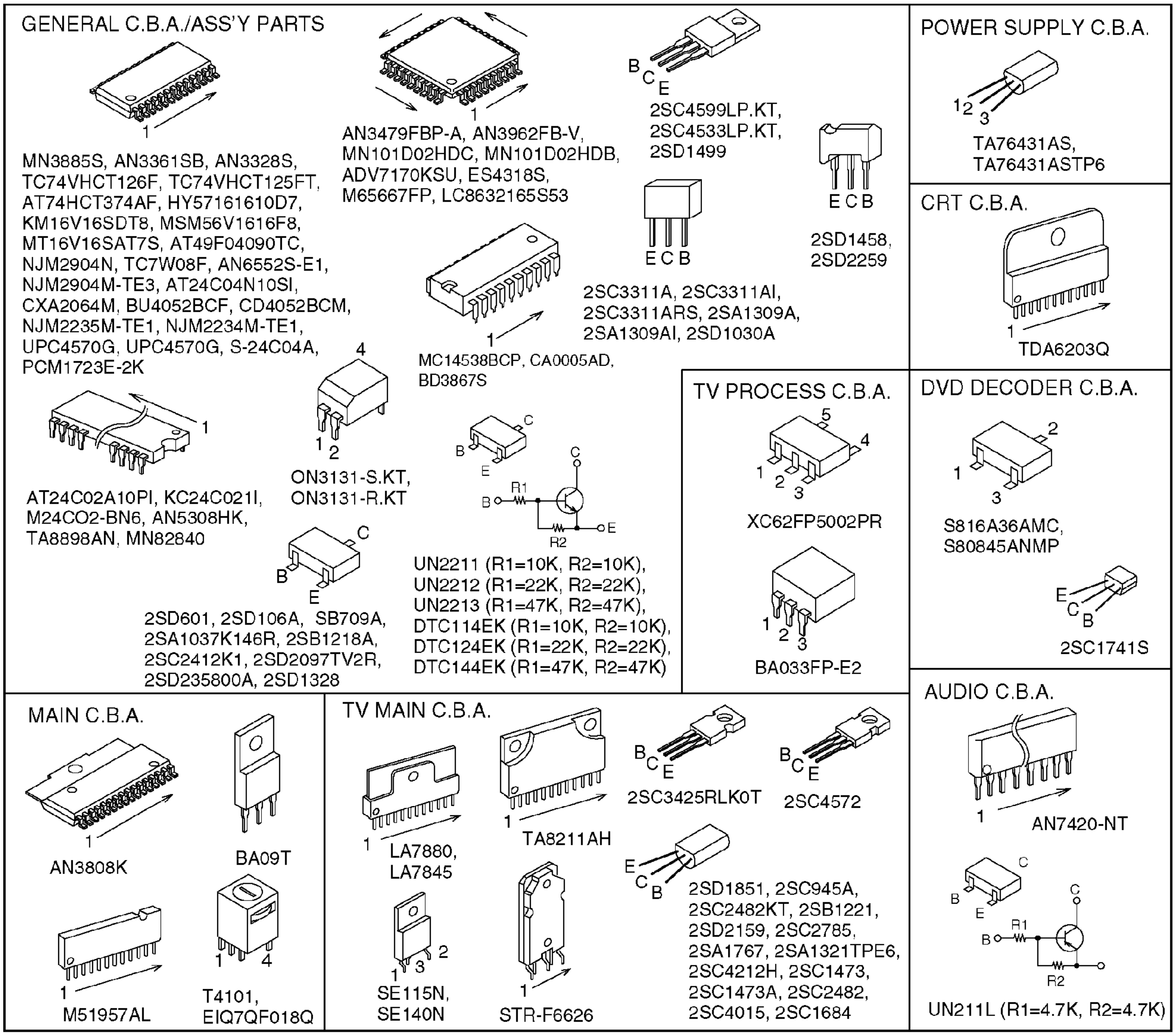
Fig. 15-3


Tweezers
Soldering Iron
Solder

Note:

Do not glue the replacement leadless component to the circuit board.

5.2. IC, TRANSISTOR AND CHIP PART INFORMATION


GENERAL C.B.A./ASS'Y PARTS
1
1
B
C
E
E C B
E C B
1
4
1 2
1
B
C
E
C
B
E
R1
R2
POWER SUPPLY C.B.A.
1 2 3
CRT C.B.A.
1
TV PROCESS C.B.A.
5
4
1 2 3
1 2 3
DVD DECODER C.B.A.
2
1
3
E C B
MAIN C.B.A.
1
1
1 4
TV MAIN C.B.A.
1
1
B C E
B C E
E C B
1 3 2
1
AUDIO C.B.A.
1
C
B
E
C
R1
B
E
R2

MN3885S, AN3361SB, AN3328S, TC74VHCT126F, TC74VHCT125FT, AT74HCT374AF, HY57161610D7, KM16V16SDT8, MSM56V1616F8, MT16V16SAT7S, AT49F04090TC, NJM2904N, TC7W08F, AN6552S-E1, NJM2904M-TE3, AT24C04N10SI, CXA2064M, BU4052BCF, CD4052BCM, NJM2235M-TE1, NJM2234M-TE1, UPC4570G, UPC4570G, S-24C04A, PCM1723E-2K

AN3479FBP-A, AN3962FB-V, MN101D02HDC, MN101D02HDB, ADV7170KSU, ES4318S, M65667FP, LC8632165S53

2SC4599LP.KT, 2SC4533LP.KT, 2SD1499

2SD1458, 2SD2259

2SC3311A, 2SC3311AI, 2SC3311ARS, 2SA1309A, 2SA1309AI, 2SD1030A

MC14538BCP, CA0005AD, BD3867S

AT24C02A10PI, KC24C021I, M24CO2-BN6, AN5308HK, TA8898AN, MN82840

ON3131-S.KT, ON3131-R.KT

2SD601, 2SD106A, SB709A, 2SA1037K146R, 2SB1218A, 2SC2412K1, 2SD2097TV2R, 2SD235800A, 2SD1328

UN2211 (R1=10K, R2=10K),
UN2212 (R1=22K, R2=22K),
UN2213 (R1=47K, R2=47K),
DTC114EK (R1=10K, R2=10K),
DTC124EK (R1=22K, R2=22K),
DTC144EK (R1=47K, R2=47K)

TA76431AS, TA76431ASTP6

TDA6203Q

XC62FP5002PR

BA033FP-E2

S816A36AMC, S80845ANMP

2SC1741S

AN3808K

BA09T

M51957AL

T4101, EIQ7QF018Q

LA7880, LA7845

TA8211AH

2SC3425RLK0T

2SC4572

SE115N, SE140N

STR-F6626

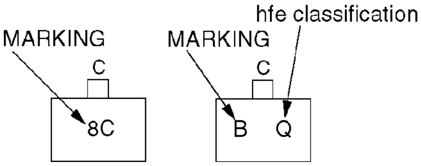
2SD1851, 2SC945A, 2SC2482KT, 2SB1221, 2SD2159, 2SC2785, 2SA1767, 2SA1321TPE6, 2SC4212H, 2SC1473, 2SC1473A, 2SC2482, 2SC4015, 2SC1684

AN7420-NT

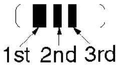
UN211L (R1=4.7K, R2=4.7K)

HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

MARKING	PART NO.	MARKING	PART NO.
B	2SB709A	6Q	UN211L
Z	2SD1819A	25	DTC124EK
BR	2SC2412KR	8A	UN2212
FR	2SA1037KR	8B	UN2212
Y	2SD601	8C	UN2213
Z	2SD601A		


hfe classification
MARKING
C
8C
MARKING
C
B Q

HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.



The widest color band must be read first for value.

(a) RESISTOR

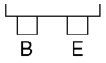
There are two types (ERD10LLJ... and ERD10TLJ...) of chip parts.

1) ERD10LLJ : Refer to above type.
2) ERD10TLJ : The narrow color band must be read first for value.

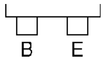
If this part is included in the parts list, be sure that the color band is read properly when servicing.

(b) CAPACITOR

Because of the width of the color bands, the reading direction cannot be specified. However, the color band can be read on either side. Be sure to confirm the value



UN2213



2SB709A

can be read on either side. Be sure to confirm the value using the schematic diagram.

CAUTION :

Once chip parts are removed, they must not be reused. Always use a new part when installing a chip part.

6. DISASSEMBLY/ASSEMBLY PROCEDURES

6.1. CABINET SECTION

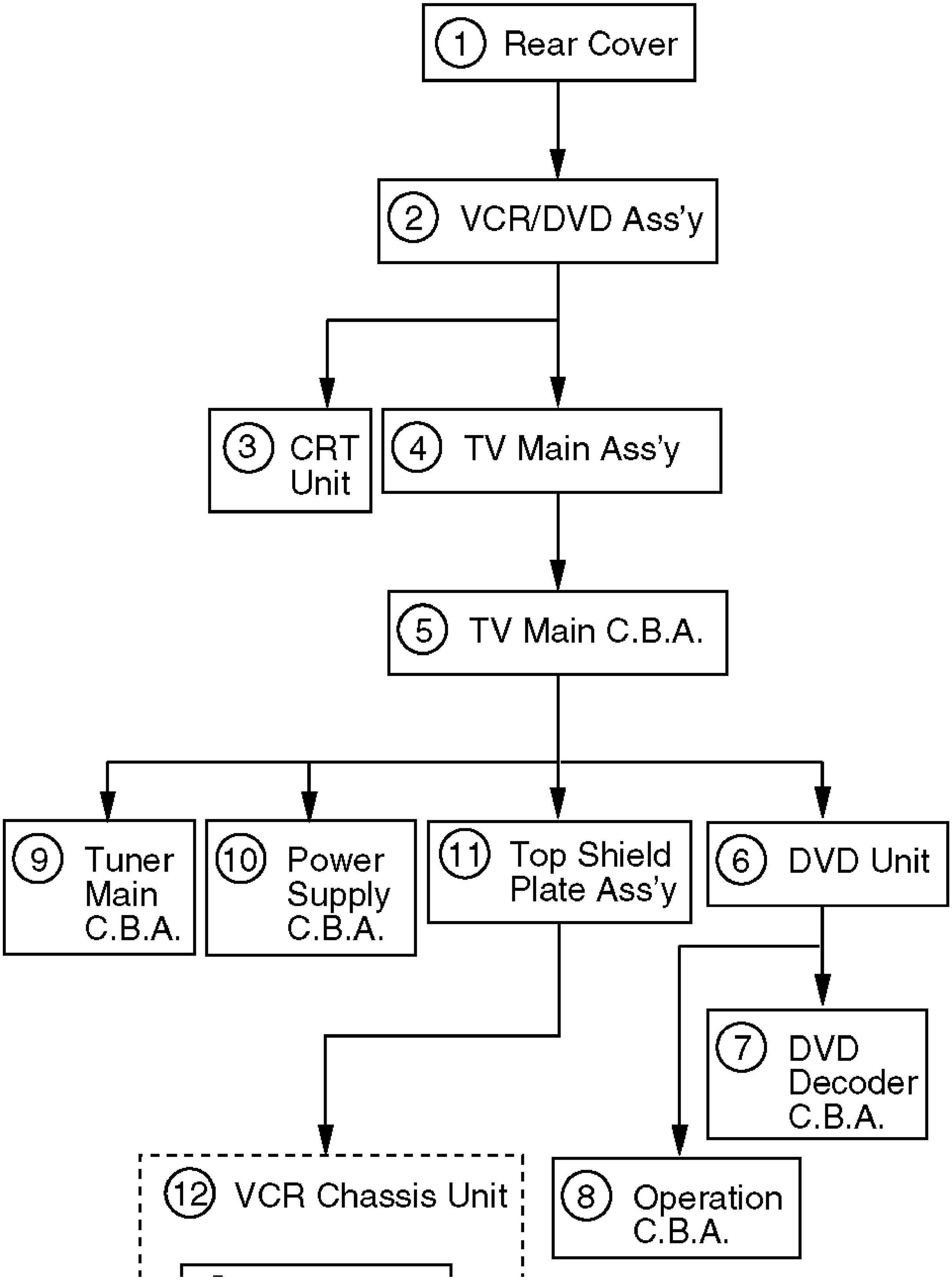
6.1.1. Disassembly Flowchart

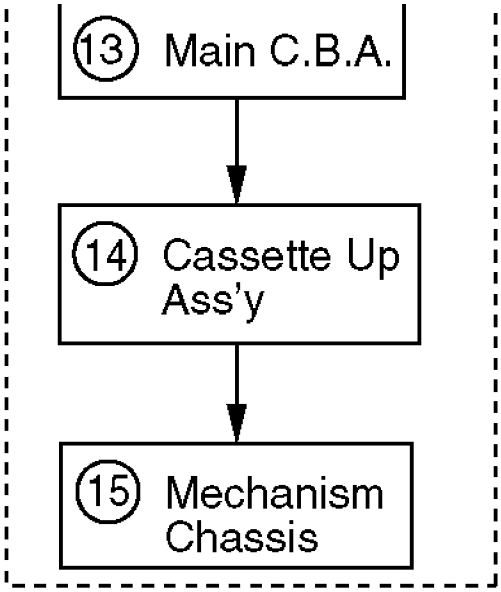
Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:

Disconnect AC plug before disassembly.

Fig. D1


① Rear Cover
② VCR/DVD Ass'y
③ CRT Unit
④ TV Main Ass'y
⑤ TV Main C.B.A.
⑨ Tuner Main C.B.A.
⑩ Power Supply C.B.A.
⑪ Top Shield Plate Ass'y
⑥ DVD Unit
⑦ DVD Decoder C.B.A.
⑫ VCR Chassis Unit
⑧ Operation C.B.A.


13 Main C.B.A.
14 Cassette Up Ass'y
15 Mechanism Chassis

6.1.2. Disassembly Method

STEP /LOC. No.	PART	Fig. No.	REMOVE	Note
①	Rear Cover	D2	13(S-1), 2(S-2)	-
②	VCR/DVD Ass'y	D2	Anode Cap, P354, CRT C.B.A., Deflection Yoke Connector, Degaussing Coil Connector, Clamper P4501, P4503, P5051 2 Tabs, 2 Guide Tabs	1 2
③	CRT Unit	D2	4(S-3)	3
④	TV Main Ass'y	D3	4(S-4), P351,P501, P502, P850, P1005, P4209, P4506, P4591, Clampers, Frame	-
⑤	TV Main C.B.A.	D3	(S-5), (S-6), (S-20), 5(L-1)	-
⑥	DVD Unit	D3	4(S-7), 4(S-8), Mount Plates, Connector Cable (IDE) Connector Cable (Power)	7
⑦	DVD Decoder C.B.A.	D3	2(S-9), 2(S-10), P1501, P4004, P6002	-
⑧	Operation C.B.A.	D3	2(S-11), 2(L-2), P4005	-

⑨	Tuner Main C.B.A.	D3	2(L-3), P1001, P1003, P4007, P6501, Clampers	-
⑩	Power Supply C.B.A.	D3	2(S-12), 2(L-4)	-
⑪	Top Shield Plate Ass'y	D3	4(S-13), (S-14)	-
⑫	VCR Chassis Unit	D3	2(S-15), 2(S-16), (S-17), 5(L-5)	4
⑬	Main C.B.A.	D3	P3001, P4001, P6201, P6202,	5
⑭	Cassette Up Ass'y	D3	2(S-18), (S-19), (L-6), (P-1)	6
⑮	Mechanism Chassis	D3	-----	-

↑ A ↑ B ↑ C ↑ D ↑ E

How to read chart shown above:

A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
These numbers are also used as the identification (location) No. of parts in Figures.

B: Part to be removed or installed.

C: Fig. No. showing Procedure or Part Location.

D: Identification of part to be removed, unhooked, unlocked, released, unplugged or unsoldered.

released, unplugged or unsoldered.
9(S-1) = 9 Screws (S-1), 6(L-1) = 6 Locking Tabs (L-1),
(P-1) = Spring (P-1)

E: Refer to "Notes in chart."

Fig. D2

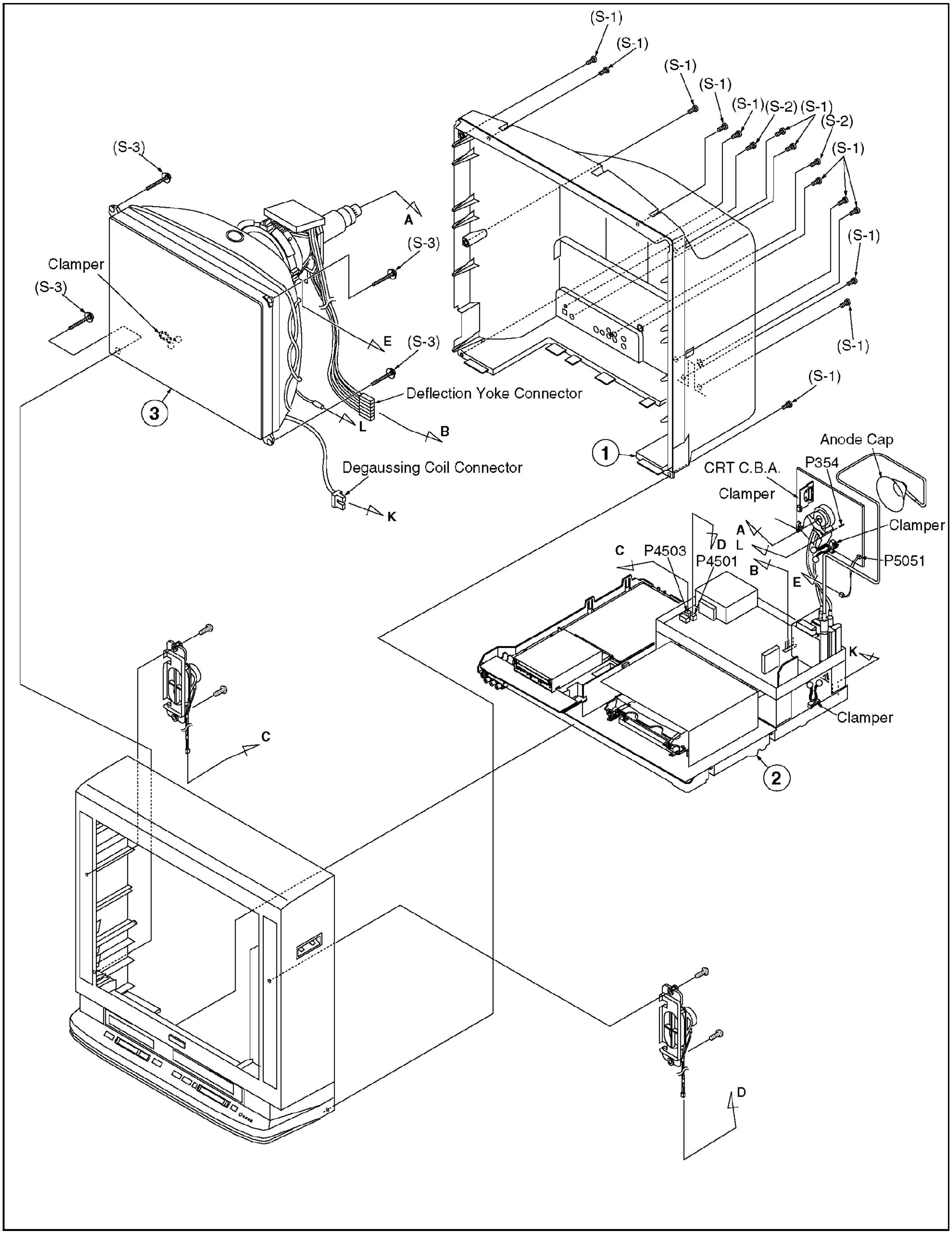
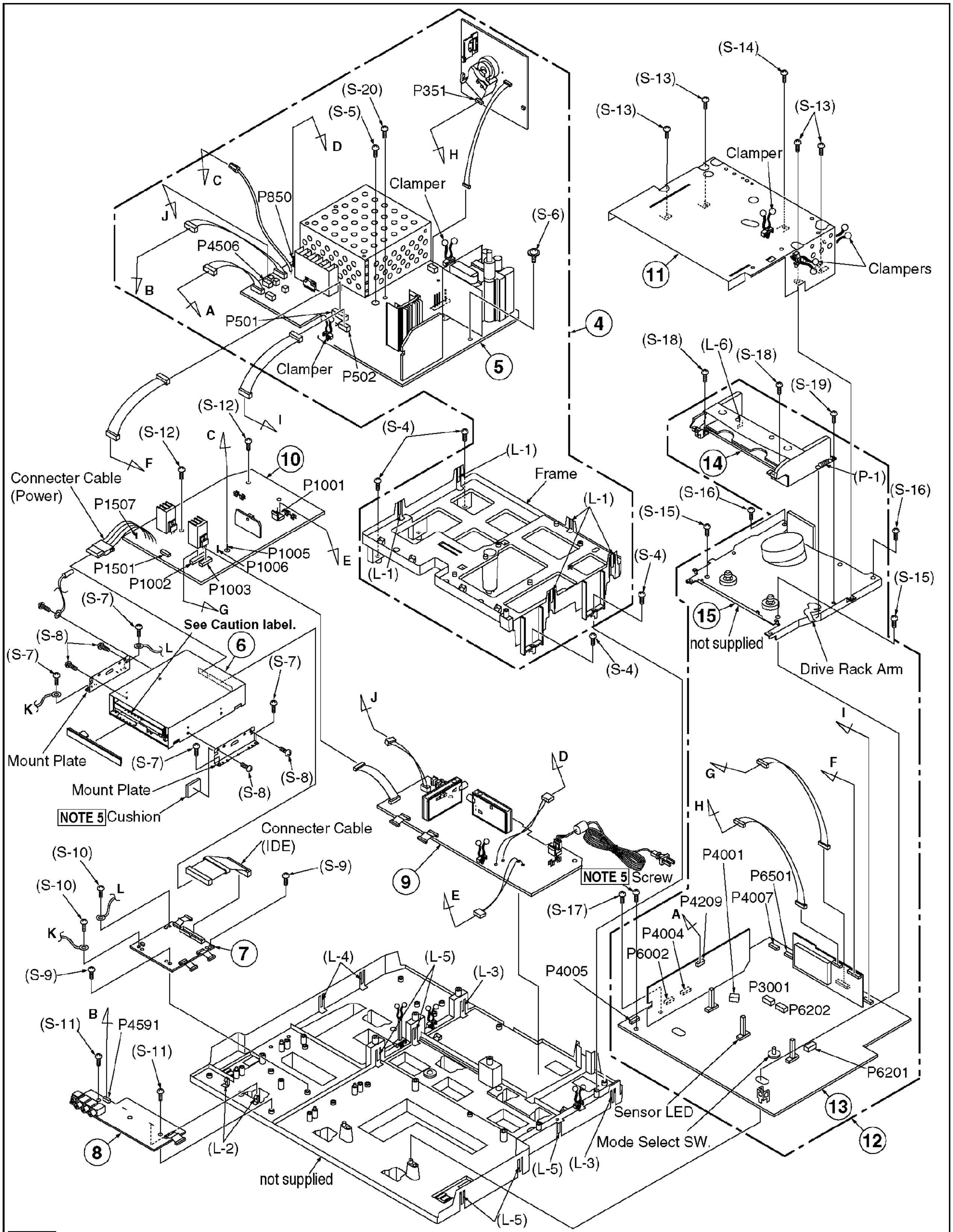

(S-1)
(S-1)
(S-1)
(S-1)
(S-1)
(S-2)
(S-1)
(S-2)
(S-1)
(S-1)
(S-1)
(S-1)
(S-3)
A
(S-3)
Clamper
(S-3)
E
(S-3)
Deflection Yoke Connector
3
L
B
1
Anode Cap
CRT C.B.A.
P354
Degaussing Coil Connector
Clamper
K
A
Clamper
D
L
C
P4503
P4501
P5051
B
E
K
Clamper
C
2
D

Fig. D3


(S-20)
(S-5)
P351
D
H
C
P850
Clamper
(S-6)
J
P4506
B
A
P501
Clamper
P502
5
4
(S-14)
(S-13)
(S-13)
(S-13)
Clamper
Clampers
11
(S-18)
(L-6)
(S-18)
(S-19)
14
(P-1)
(S-16)
(S-16)
(S-15)
(S-15)
15
not supplied
Drive Rack Arm
F
I
(S-12)
(S-12)
C
10
P1001
Connecter Cable
(Power)
P1507
P1501
P1002
P1005
P1006
P1003
E
G
(S-4)
(L-1)
Frame
(L-1)
(L-1)
(S-4)
(S-4)
(S-7)
(S-8)
See Caution label.
6
(S-7)
(S-7)
L
K
Mount Plate
(S-7)
Mount Plate
(S-8)
(S-8)
NOTE 5 Cushion
J
D
Connecter Cable
(IDE)
(S-9)
9
NOTE 5 Screw
E
(S-10)
(S-10)
L
K
7
(S-9)
I
G
F
H
P4001
P6501
P4209
P4007
A
P4004
P6002
(S-17)
P4005
P3001
P6202
P6201
13
12
Sensor LED
Mode Select SW.
(L-4)
(L-5)
(L-3)
(S-11)
B
P4591
(S-11)
8
(L-2)
not supplied
(L-5)
(L-3)
(L-5)

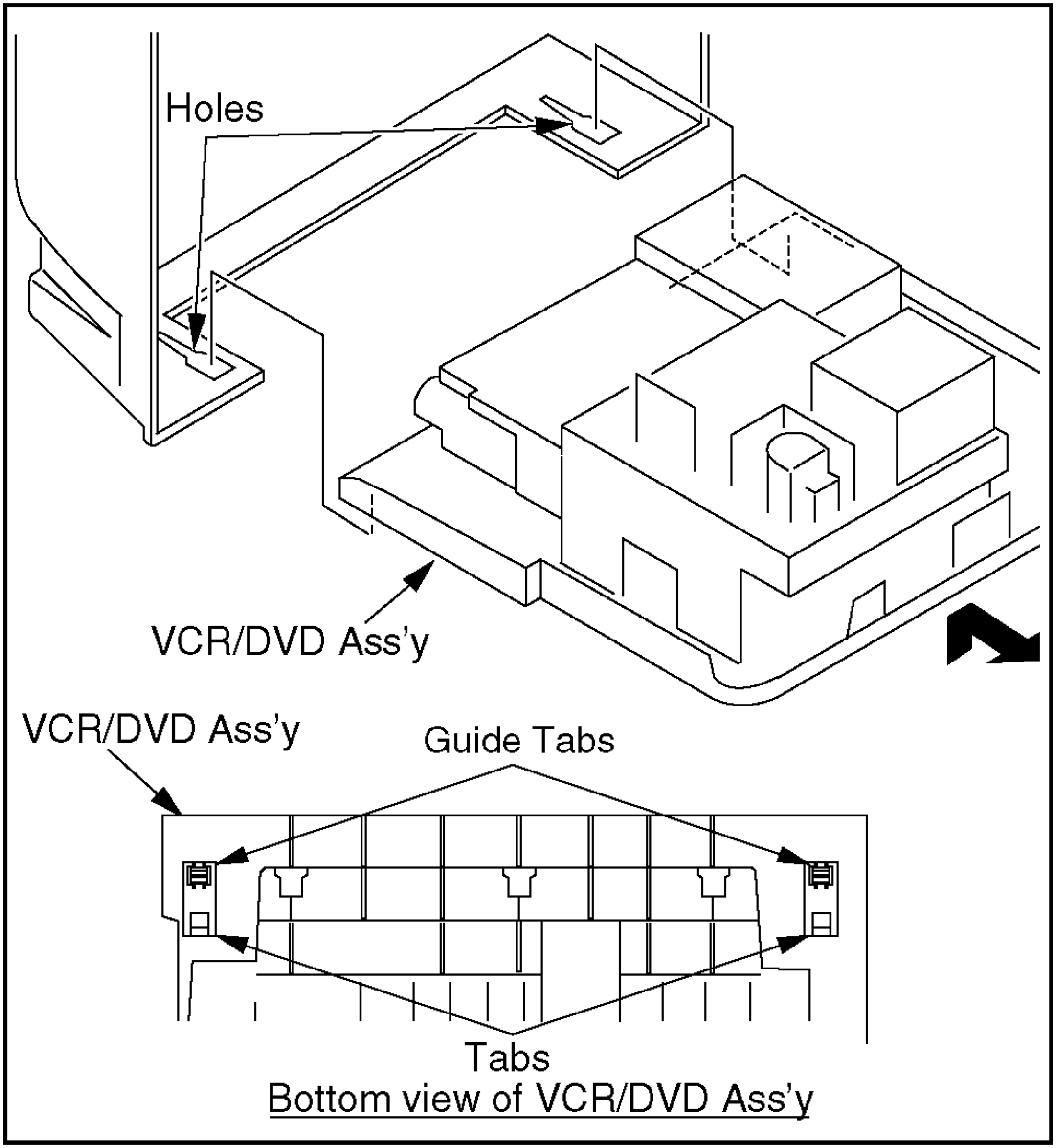
NOTE 5: In early units, a Cushion (Ref. No. 268) is used alone. In later units, a Screw (Ref. No. 432) is used instead.

NOTE 5: In early units, a Cushion (Ref. No. 268) is used alone. In later units, a Screw (Ref. No. 432) is used instead.
For units in which a Screw is used, a Cushion is not necessary.

6.1.2.1. Notes in chart

1. Removal of VCR/DVD Ass'y

Fig. D4


Holes
VCR/DVD Ass'y
VCR/DVD Ass'y
Guide Tabs
Tabs
Bottom view of VCR/DVD Ass'y

2. Installation of VCR/DVD Ass'y

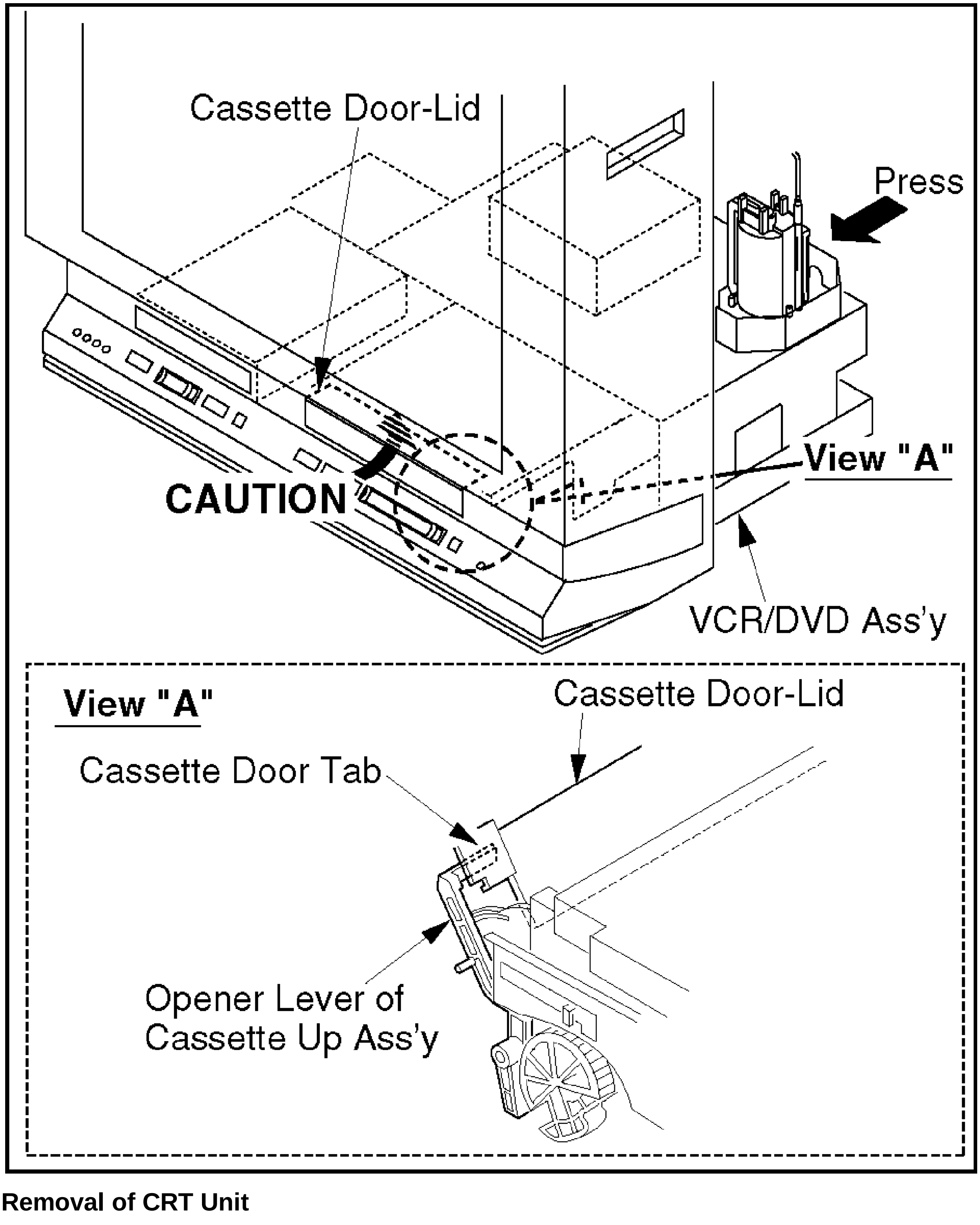
CAUTION:

Opener Lever may be damaged when VCR/DVD Ass’y is installed, with Cassette Door-Lid and Opener Lever of Cassette Up Ass’y set incorrectly.

A. When installing the VCR/DVD Ass’y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.

B. Make sure that all guide tabs are aligned properly.
Then, press the VCR/DVD Ass’y straight in.

Fig. D5


Cassette Door-Lid
Press
View "A"
CAUTION
VCR/DVD Ass'y
View "A"
Cassette Door-Lid
Cassette Door Tab
Opener Lever of
Cassette Up Ass'y

3. Removal of CRT Unit

Place the Unit face down on a soft cloth before removing the CRT Unit.

4. Installation of VCR Chassis Unit

When installing 2 Screws (S-15), slide the Holder Unit of the Cassette Up Ass'y (Refer to "METHOD FOR LOADING/UNLOADING OF MECHANISM" in Service Notes) to tighten screws. Then, slide it back to the EJECT Position.
Make sure that Mechanism and Cassette Up Ass'y are in the EJECT Position. (Refer to "EJECT Position Confirmation" in Disassembly/Assembly Procedures.)

5. Removal of Main C. B. A.

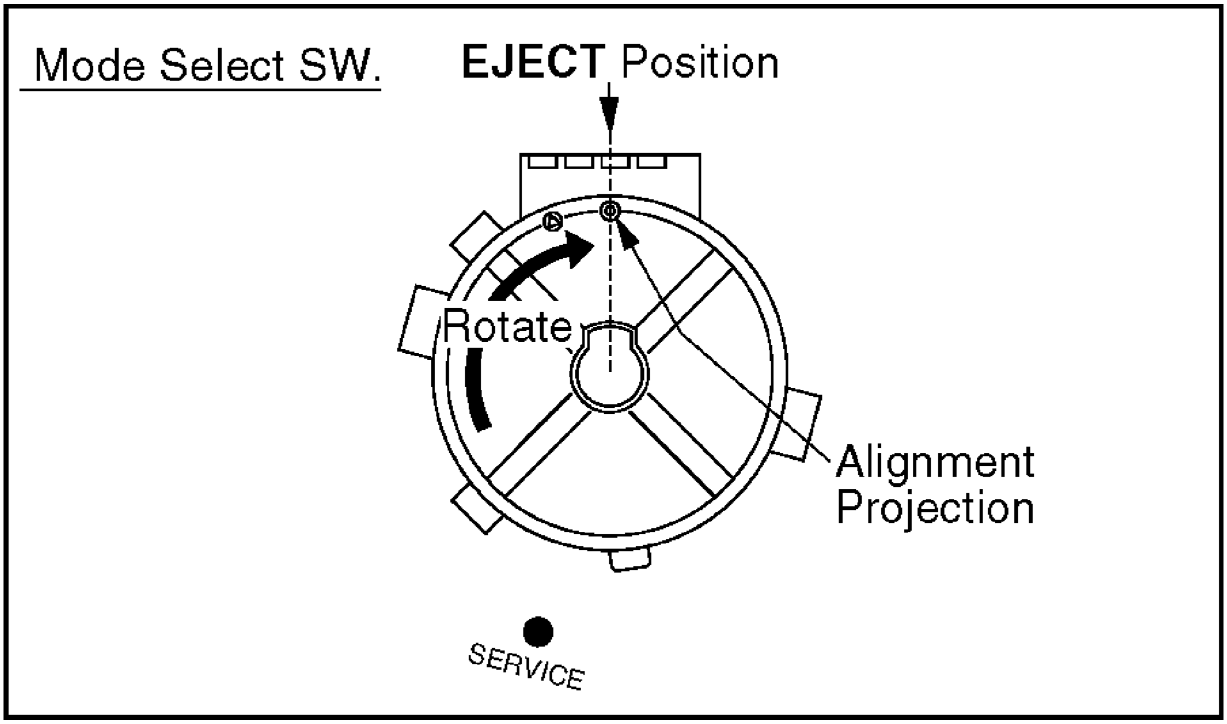
Work carefully so as not to break Sensor LED when lifting the Mechanism Chassis and Cassette Up Ass'y.

Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

A. Make sure the Mode Select SW. on the Main C.B.A. is in EJECT position. If not, rotate the Mode Select SW. until the alignment projection is in the EJECT Position.

B. Make sure the Mechanism and Cassette Up Ass'y are in the EJECT Position. (Refer to "EJECT Position Confirmation" in DISASSEMBLY/ASSEMBLY PROCEDURES.)

Fig. D6



C. Install the Mechanism Chassis and Cassette Up Ass'y straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 4 Connectors (P6201, P6202, P3001, and P4001) are aligned and seated securely.

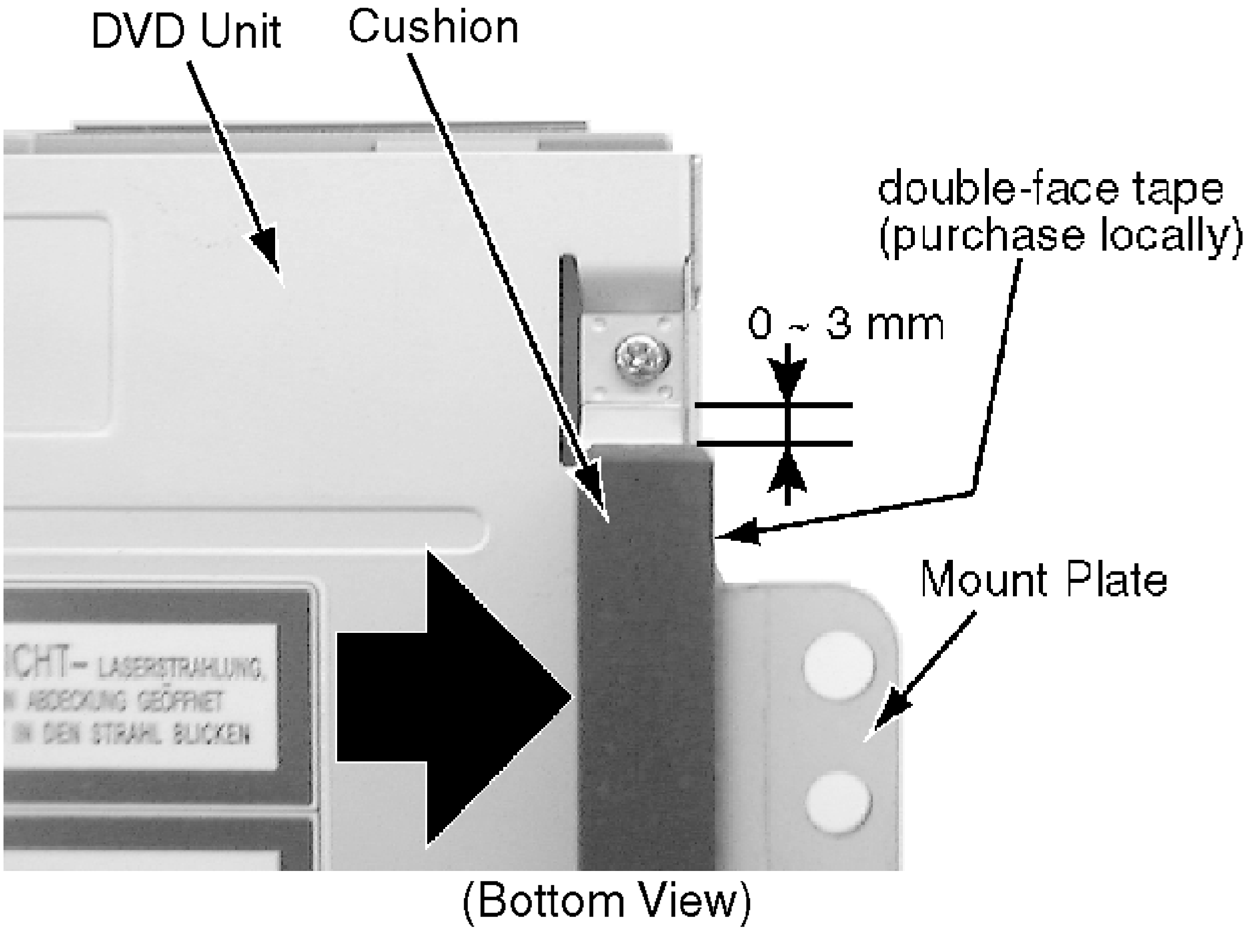
6. Installation of Cassette Up Ass'y

A. Confirm that the Locking Tab (L-6) under the Cassette Up Ass’y is in Hole on the Mechanism Chassis when installing the Cassette Up Ass’y. Then, slide the Cassette Up Ass’y towards the back.
B. When installing 2 Screws (S-18), slide the Holder Unit (Refer to "METHOD FOR LOADING/UNLOADING OF MECHANISM" in Service Notes) to tighten screws. Then, slide it back to the EJECT Position.
C. Hook Spring (P-1) to the Drive Rack Arm on the Mechanism Chassis.

7. Reinstallation of Cushion

When reinstalling the Cushion, fasten it securely to the Mount Plate using double -face tape as shown below.

Fig. D7


DVD Unit
Cushion
double-face tape
(purchase locally)
0 ~ 3 mm
Mount Plate
ICHT- LASERSTRAHLUNG,
ABDECKUNG GEÖFFNET
IN DEN STRAHL BLICKEN
(Bottom View)

6.2. MECHANISM SECTION

6.2.1. Disassembly/Reassembly Method

This procedure starts with the condition that the cabinet parts and Main C.B.A. have been removed.
When reassembling, perform the step(s) in the reverse order.
Perform all disassembly/reassembly and alignments procedures in EJECT Position.

Step/Loc. No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	------------	Grounding Plate Unit	J2-1	(S-1)	Adjustment
②	------------	Full Erase Head	J2-1	(L-1)	
③	1	Cylinder Unit	J2-1	P4092, Unsolder, 2(S-2), 3(S-3), Head Amp C.B.A.	TAPE INTERCHANGEABILITY Adjustment
④	------------	Capstan Belt	J3-1	-	
⑤	------------	Support Angle	J3-1	(S-4), (S-5)	
⑥	5	Intermediate Gear B	J3-1	(L-2)	Gear Alignment
⑦	4,5,6	Main Cam Gear	J3-1	Main Cam Push Nut	Gear Alignment
⑧	4	Center Clutch Unit	J4-1	(W-1)	
⑨	4,8	Changing Gear Spring	J4-1	-	
⑩	4,8,9	Changing Gear	J4-1	-	
⑪	4,8,9,10	Idler Arm Unit	J4-1	-	
⑫	------------	Reel Gear	J5-1	2(L-3)	
⑬	4,5,6,7,8,9,10	Main Rod	J5-1	(W-2), (L-4)	Gear Alignment
⑭	------------	Stopper Angle	J6-1	(S-6)	
⑮	4,5,14	Capstan Rotor Unit	J6-1	-	
⑯	4,5,14,15	Oil Seal	J6-1	-	
⑰	4,5,14,15	Capstan Stator C.B.A.	J6-1	P2503, 2(S-7)	
⑱	------------	MR Head	J6-1	(S-8), Unsolder	MR HEAD GAP Adjustment
⑲	4,8,9,10,13	T Loading Arm Unit	J7-1	-	Gear Alignment
⑳	4,5,6,7,8,9,10,13,19	S Loading Arm Unit	J7-1	-	Gear Alignment
㉑	------------	T Brake Unit	J8-1	-	
㉒	------------	Tension Control Arm Unit	J8-1	3(L-5)	
㉓	21	T Reel Table	J8-1	-	
㉔	22	S Reel Table	J8-1	-	
㉕	22	Tension Arm Unit	J8-1	2(L-6), (P-1), (P-2)	
㉖	22,25	Loading Post Base-T Unit	J9	-	P2 AND P3 POST HEIGHT, TAPE INTERCHANGEABILITY Adjustment
㉗	22,25	Loading Post Base-S Unit	J9	-	
㉘	------------	Opener Piece	J10-1	2(L-7)	
㉙	4,5,6,7	Drive Rack Arm	J10-1	-	
㉚	28	Pinch Arm Unit	J10-1	-	
㉛	28,30	P5 Arm Unit	J10-1	-	
㉜	5,6,28	Intermediate Gear A	J10-1	-	Gear Alignment
㉝	------------	Motor Block Unit	J11-1	2(S-9)	
㉞	------------	Audio Control Head Unit	J11	(S-10)	TAPE INTERCHANGEABILITY Adjustment
㉟	5,6,28,30,32,33	Lift Gear	J11	-	
㊱	4,5,14,15,33	Capstan Holder Unit	J11	3(S-11)	
㊲	22,25□	Tension Arm Boss	J11	(L-8)	

↑ A ↑ B ↑ C ↑ D ↑ E ↑ F

How to read chart shown above:

A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
These numbers are also used as the identification (location) No. of parts in Figures.

B: Steps to be completed prior to the current step.

C: Part to be removed or installed.

D: Fig. No. showing Procedure or Part Location.

E: Identification of part to be removed, unhooked, unlocked, released, unplugged or unsoldered.
(S-1) = Screw (S-1), (L-1) = Locking Tab (L-1),
(W-1) = Washer (W-1), (P-1) = Spring (P-1),
(C-1) = Cut Washer (C-1)

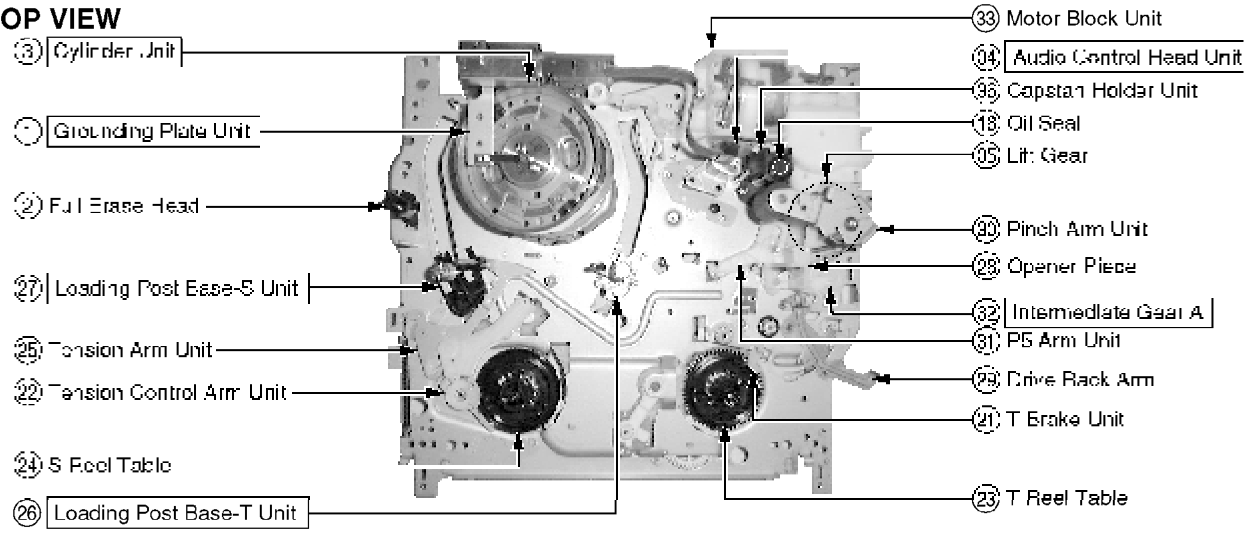
F: Alignment/Adjustment which is required when installing or replacing each Parts.

6.2.2. Inner Parts Location

Note: BOX indicates alignment (Gear Alignment or Mechanical Adjustment) required when a part is replaced.

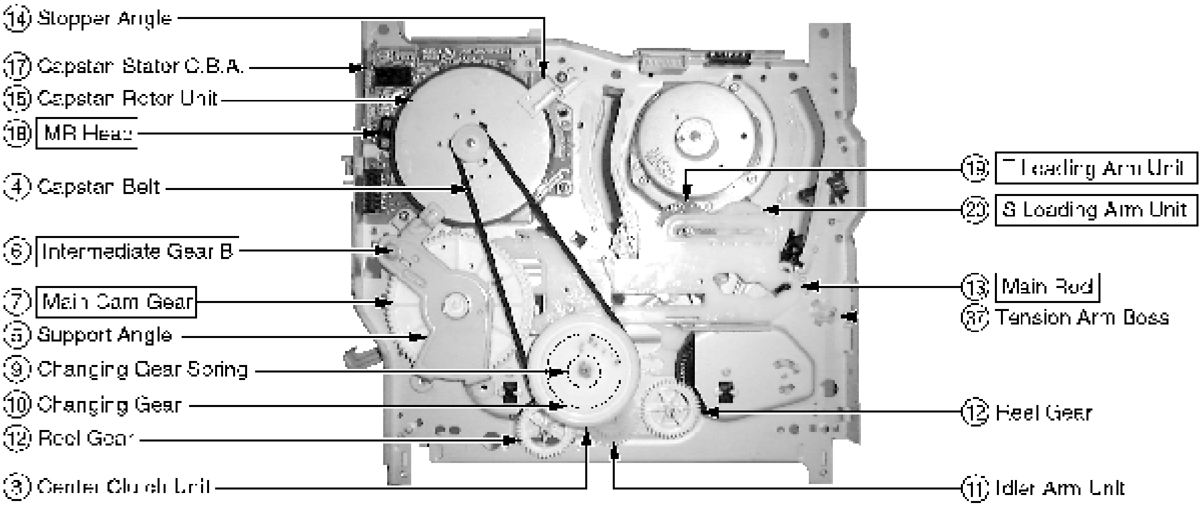
Fig. J1-1

TOP VIEW



③ Cylinder Unit
① Grounding Plate Unit
② Full Erase Head
㉗ Loading Post Base-S Unit
㉕ Tension Arm Unit
㉒ Tension Control Arm Unit
㉔ S Reel Table
㉖ Loading Post Base-T Unit
㉝ Motor Block Unit
㉞ Audio Control Head Unit
㊱ Capstan Holder Unit
⑯ Oil Seal
㉟ Lift Gear
㉚ Pinch Arm Unit
㉘ Opener Piece
㉜ Intermediate Gear A
㉛ P5 Arm Unit
㉙ Drive Rack Arm
㉑ T Brake Unit
㉓ T Reel Table

BOTTOM VIEW

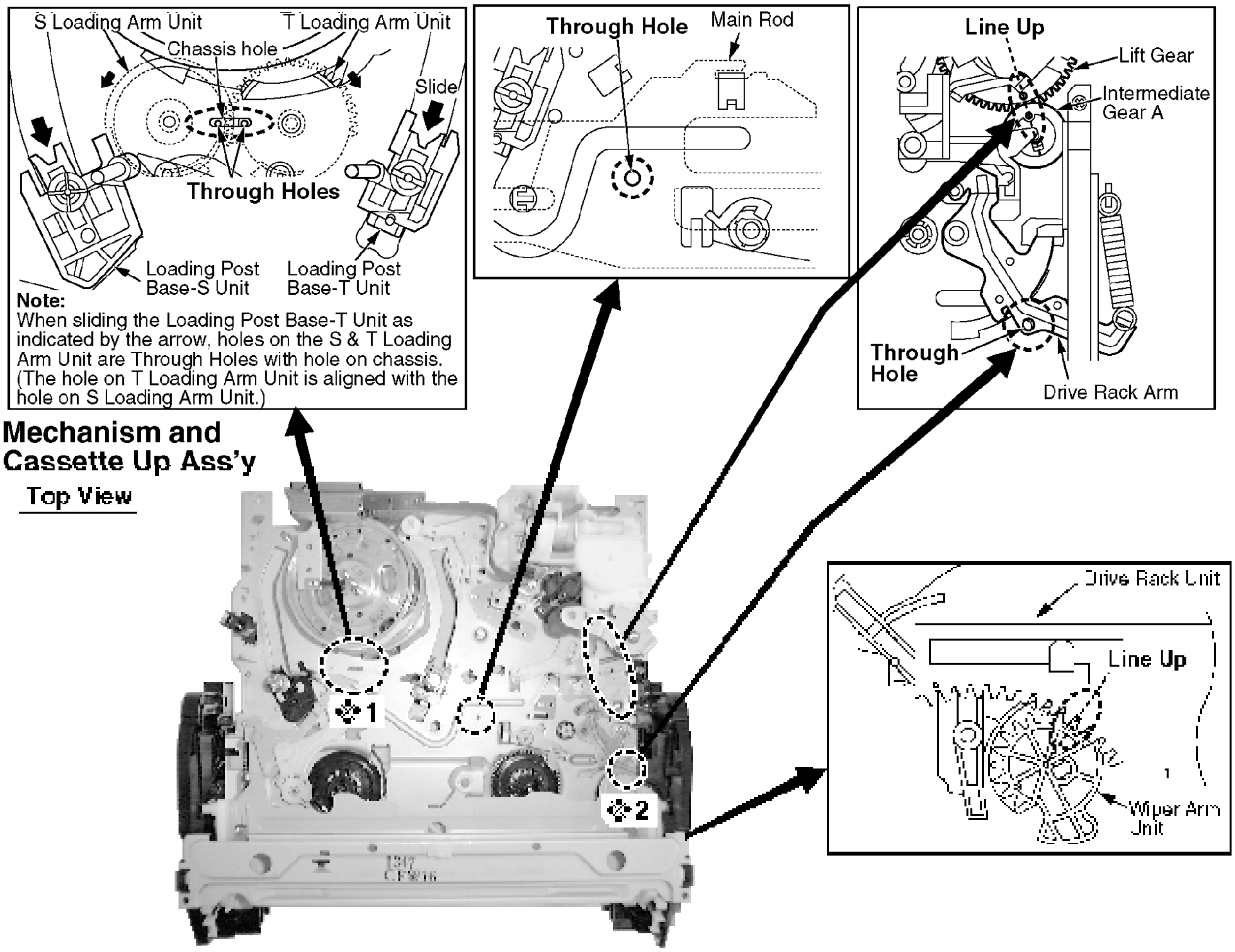


⑭ Stopper Angle
⑰ Capstan Stator C.B.A.
⑮ Capstan Rotor Unit
⑱ MR Head
④ Capstan Belt
⑥ Intermediate Gear B
⑦ Main Cam Gear
⑤ Support Angle
⑨ Changing Gear Spring
⑩ Changing Gear
⑫ Reel Gear
⑧ Center Clutch Unit
⑲ T Loading Arm Unit
⑳ S Loading Arm Unit
⑬ Main Rod
㊲ Tension Arm Boss
⑫ Reel Gear
⑪ Idler Arm Unit

6.2.3. EJECT Position Confirmation

Fig. J1-2

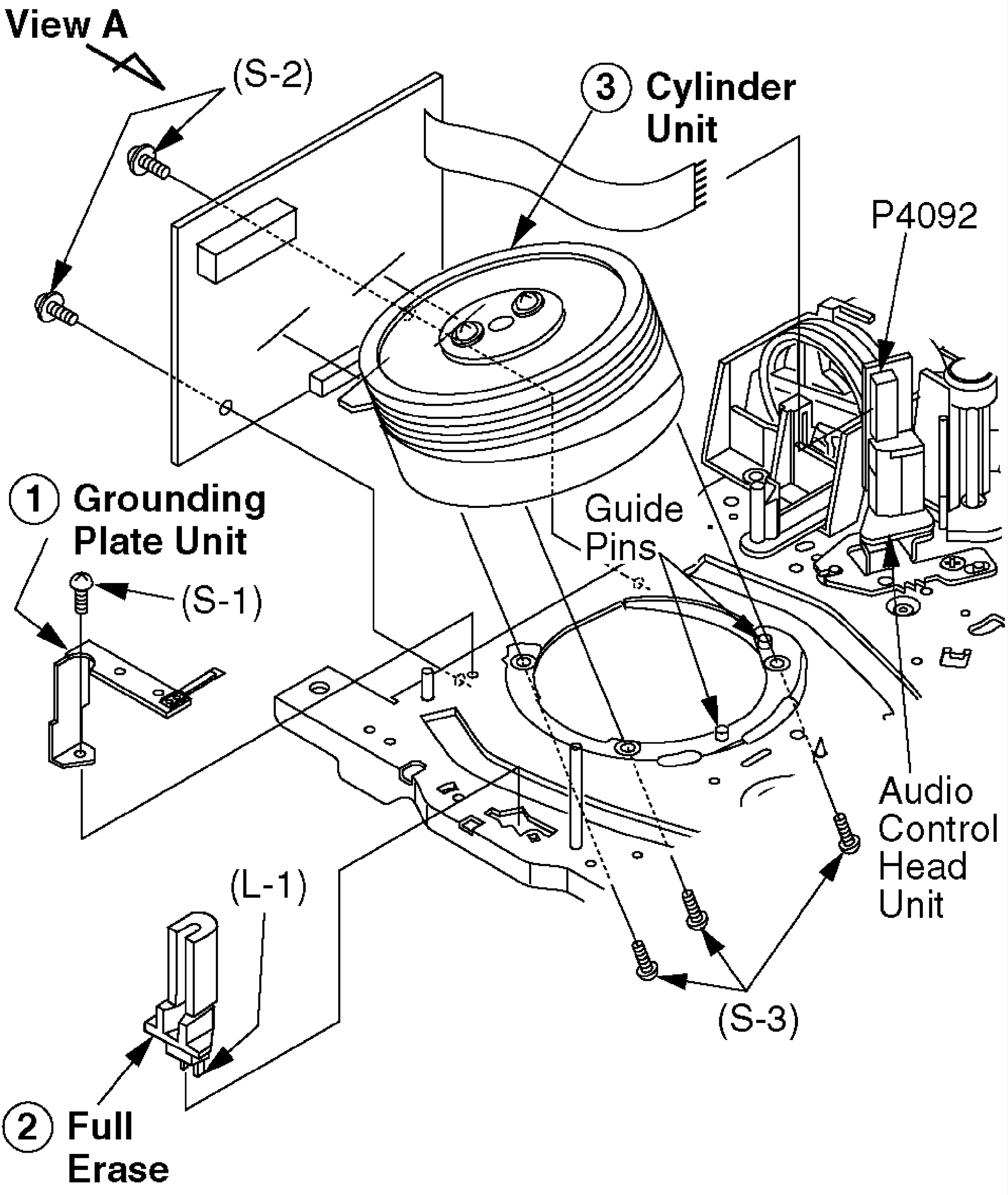
Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.


S Loading Arm Unit
T Loading Arm Unit
Chassis hole
Slide
Through Holes
Loading Post Base-S Unit
Loading Post Base-T Unit
Through Hole
Main Rod
Line Up
Lift Gear
Intermediate Gear A
Through Hole
Drive Rack Arm
Mechanism and Cassette Up Ass'y
Top View
1
2
Drive Rack Unit
Line Up
Wiper Arm Unit

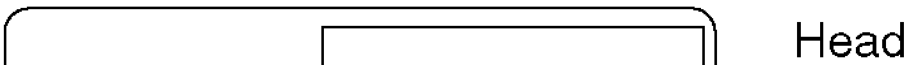
Note:
When sliding the Loading Post Base-T Unit as indicated by the arrow, holes on the S & T Loading Arm Unit are Through Holes with hole on chassis. (The hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.)

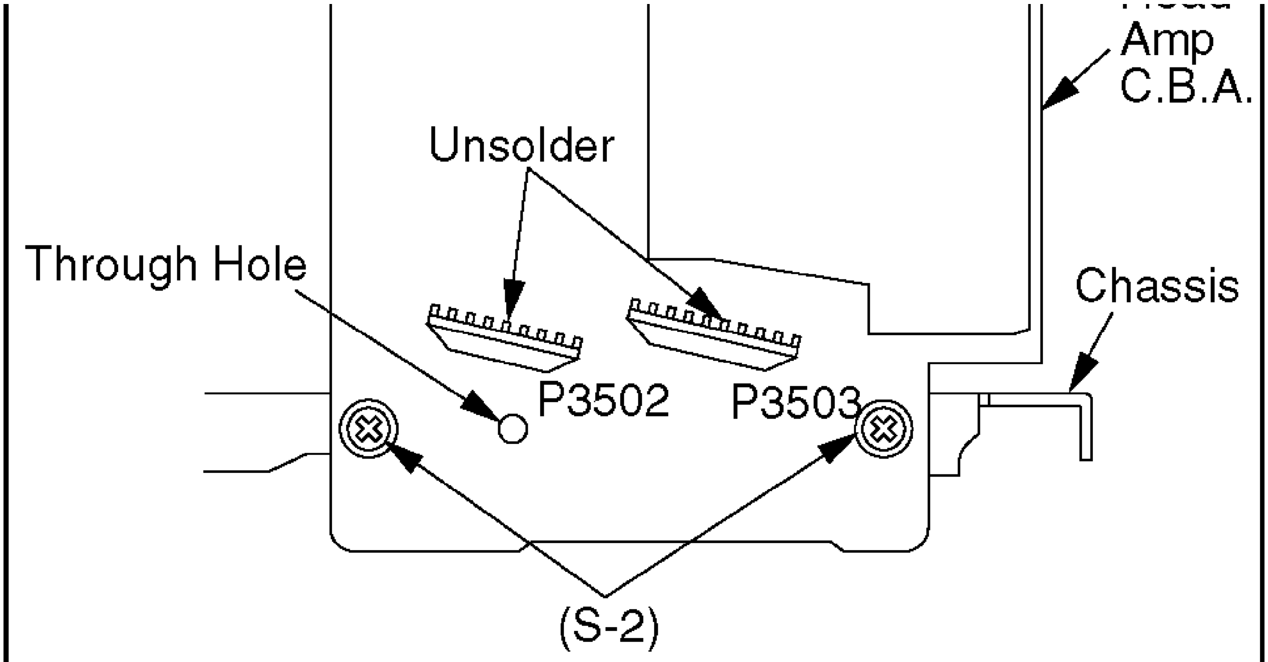
6.2.4. Grounding Plate Unit, Full Erase Head, and Cylinder Unit

Fig. J2-1


View A
(S-2)
③ Cylinder Unit
P4092
① Grounding Plate Unit
(S-1)
Guide Pins
(L-1)
Audio Control Head Unit
(S-3)
② Full Erase Head

View A


Head

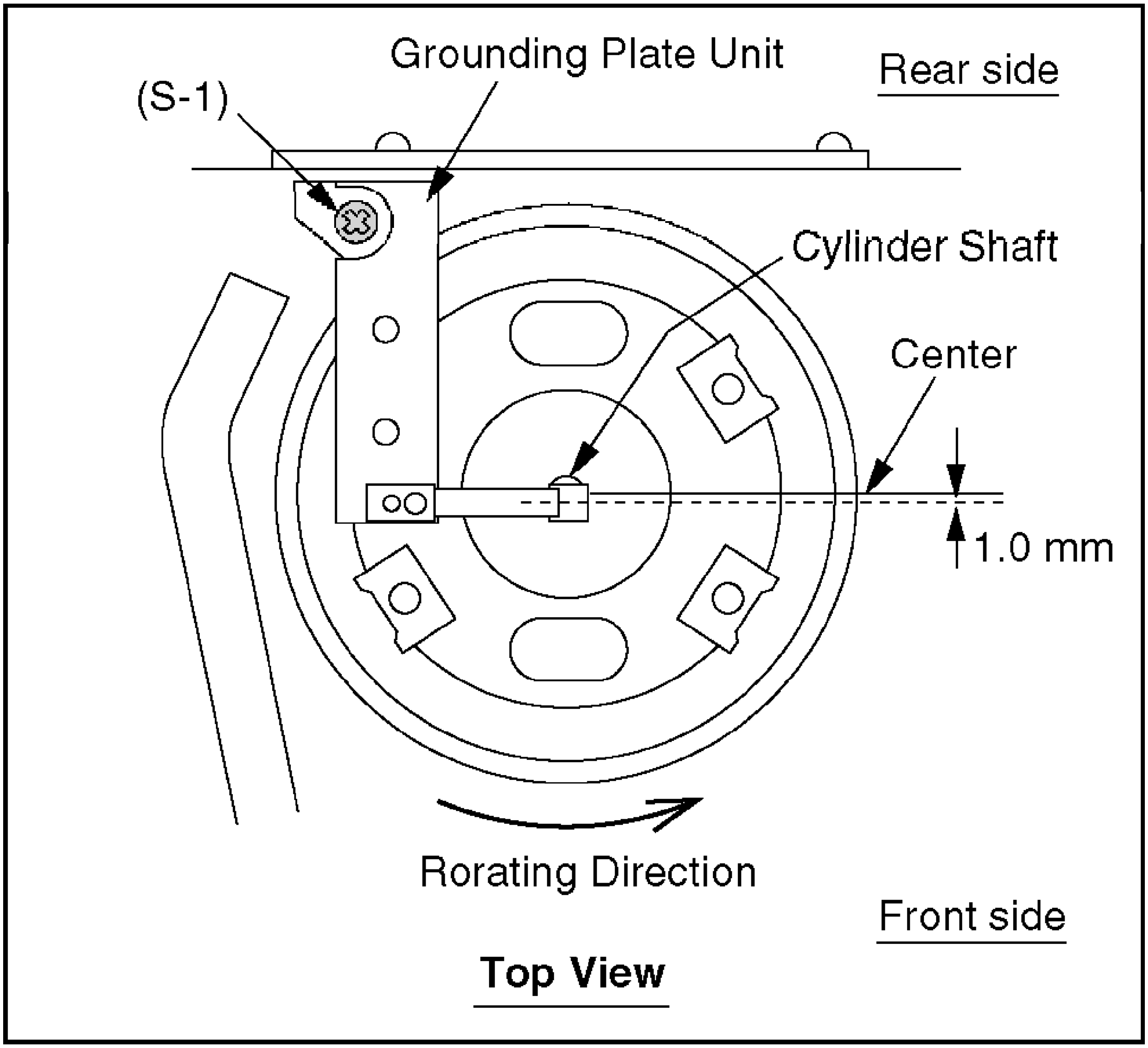


Note:
Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

6.2.4.1. Reassembly Notes

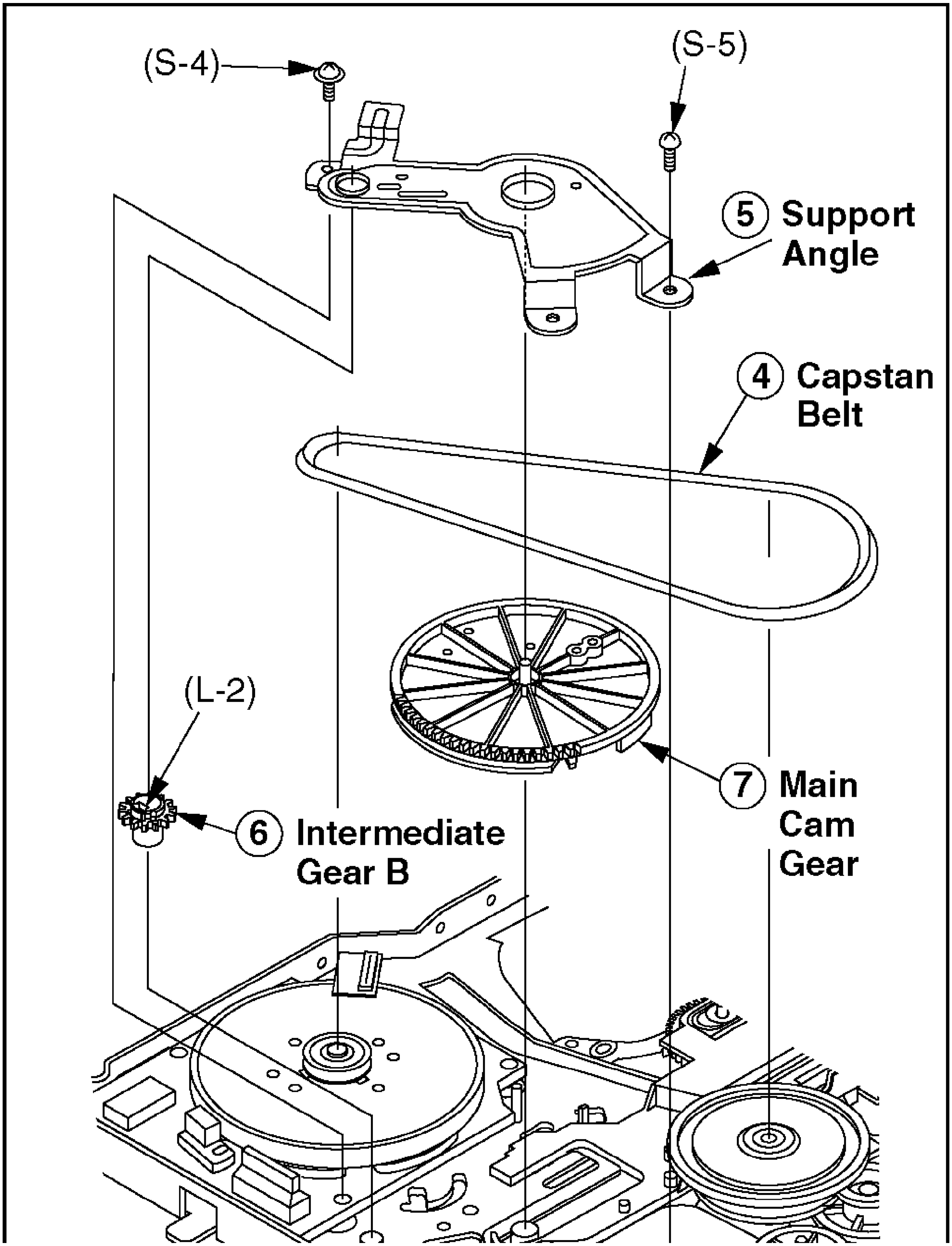
1. **Adjustment of Grounding Plate Unit**
   A. **After installing, make sure that the Grounding Plate Unit, on the top side of mechanism chassis, is positioned on the front side of the Cylinder shaft so that the center line of the plate is just less than 1.0 mm measured from the center of the Cylinder shaft.**
   If required, adjust the plate position by loosening Screw (S-1).
   Never install the Grounding Plate Unit on the rear side of the Cylinder shaft.
   Incorrect positioning will cause cylinder buzz.

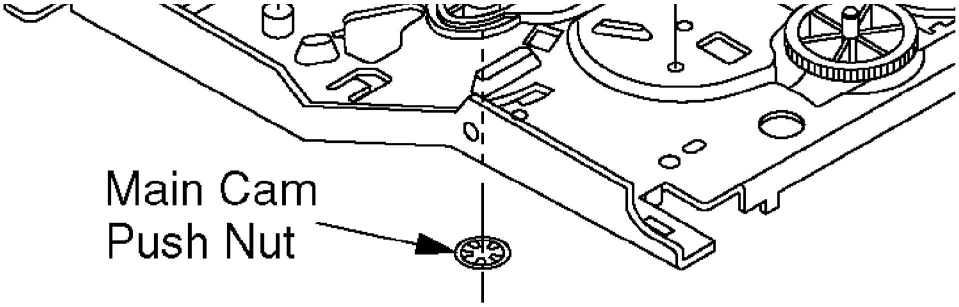
Fig. J2-2


Grounding Plate Unit
Rear side
(S-1)
Cylinder Shaft
Center
1.0 mm
Rorating Direction
Front side
Top View

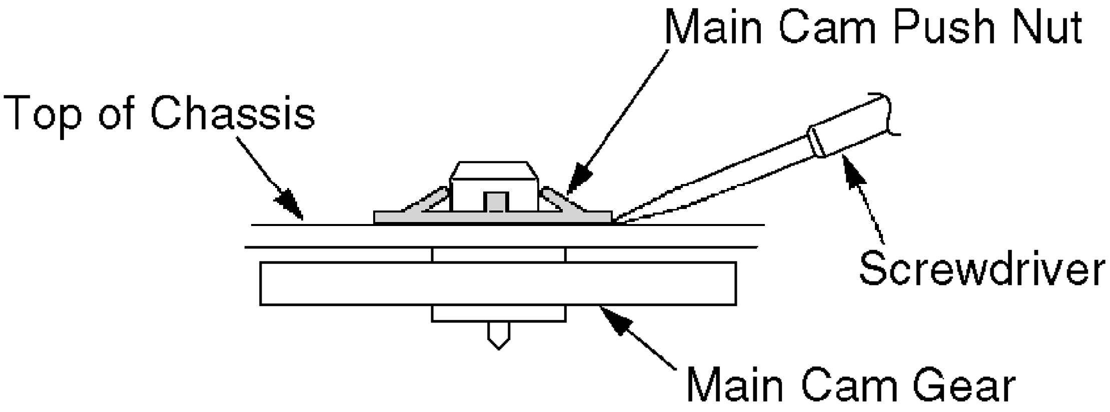
6.2.5. Capstan Belt, Support Angle, Intermediate Gear B, and Main Cam Gear

Fig. J3-1


(S-4)
(S-5)
5 Support Angle
4 Capstan Belt
(L-2)
7 Main Cam Gear
6 Intermediate Gear B


Main Cam
Push Nut

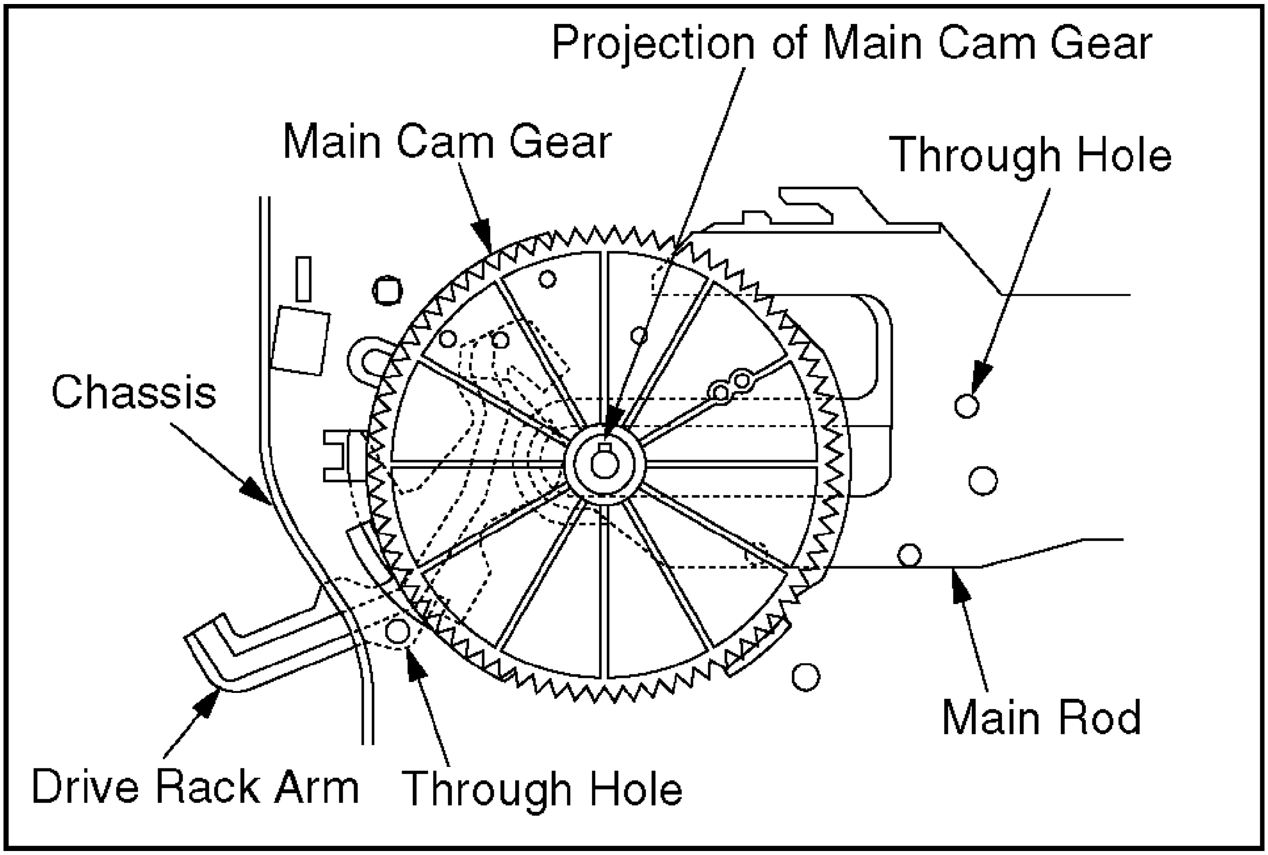
Note:
Remove the Main Cam Push Nut using a screwdriver etc.


Main Cam Push Nut
Top of Chassis
Screwdriver
Main Cam Gear

6.2.5.1. Reassembly Notes

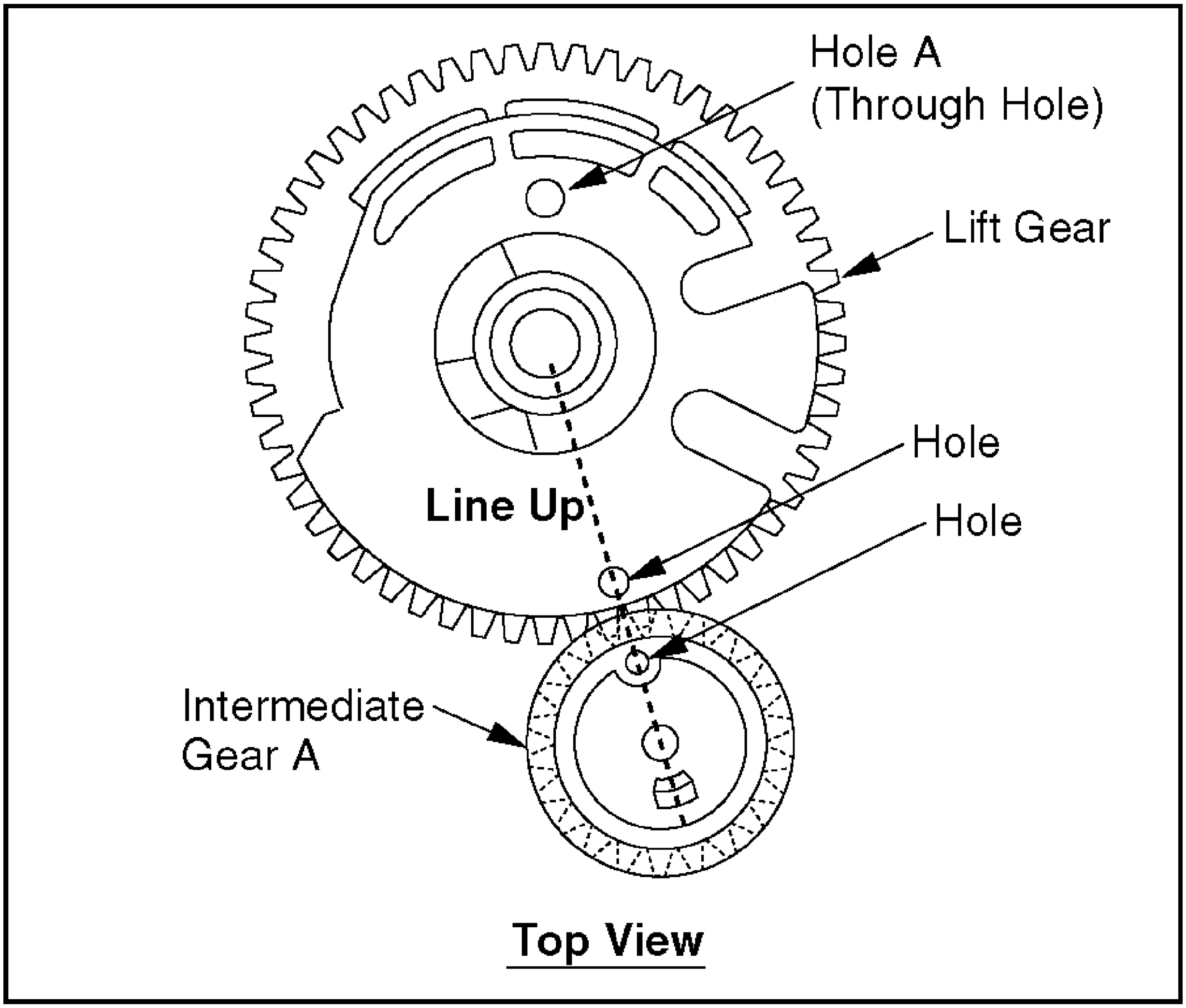
1. **Alignment of Main Cam Gear, Drive Rack Arm, and Main Rod**
   - **A. Confirm that the hole on Main Rod is a Through Hole with a hole on chassis.**
   - **B. Confirm that the hole on Drive Rack Arm is a Through Hole with a hole on chassis.**
   - **C. Install the Main Cam Gear so that the projection of Main Cam Gear is in the upward position as shown.**

Fig. J3-2


Projection of Main Cam Gear
Main Cam Gear
Through Hole
Chassis
Main Rod
Drive Rack Arm
Through Hole

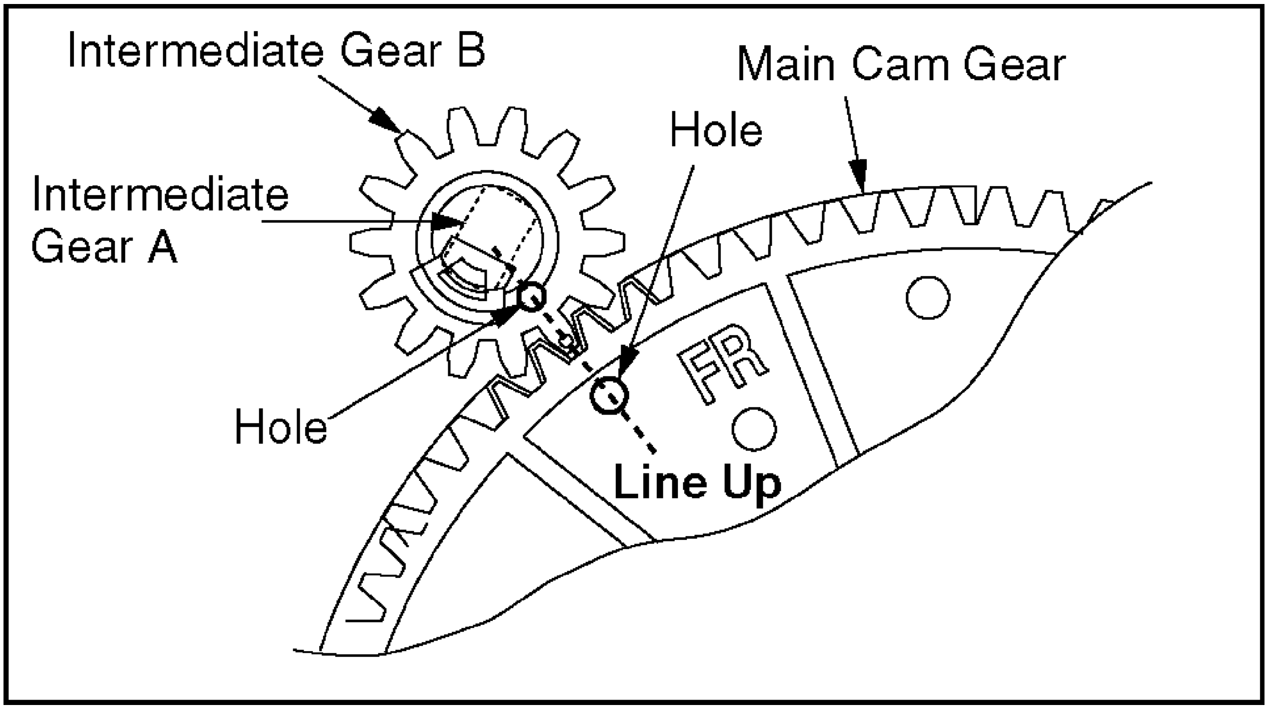
2. **Confirmation/Alignment of Intermediate Gear B, Main Cam Gear, and Intermediate Gear A**
   - **A. Confirm that the Hole A on Lift Gear is a Through Hole with a hole on chassis.**
   - **B. Confirm that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.**

Fig. J3-3


Hole A
(Through Hole)
Lift Gear
Hole
Hole
Line Up
Intermediate
Gear A
Top View

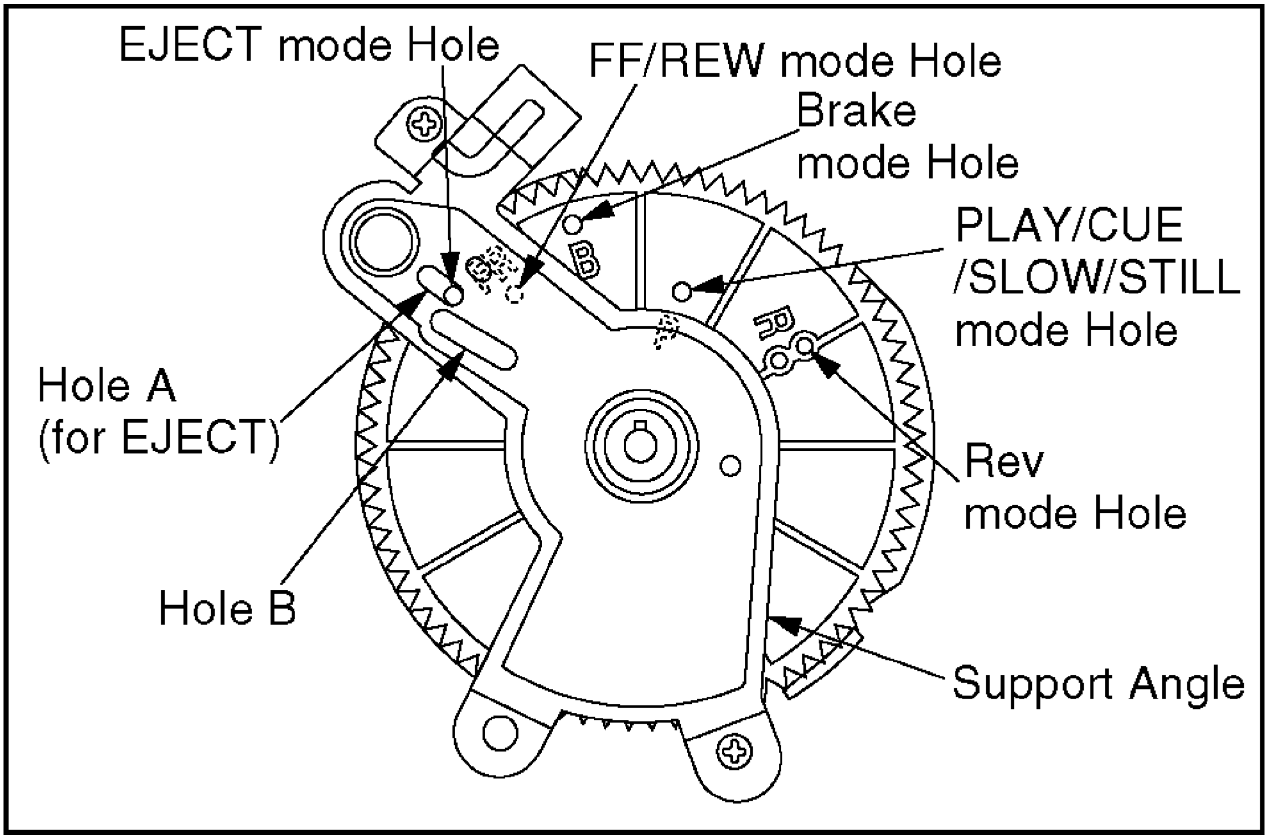
C. Install the Intermediate Gear B so that the hole on the Intermediate Gear B is aligned with the hole on the Main Cam Gear.

Fig. J3-4


Intermediate Gear B
Main Cam Gear
Hole
Intermediate Gear A
Hole
FR
Line Up

3. **Holes on Main Cam Gear**
   A. **The EJECT mode Hole on Main Cam Gear should be a Through Hole with Hole A on Support Angle in EJECT mode. The each mode Hole on Main Cam Gear should be a Through Hole with Hole B on Support Angle in each mode.**

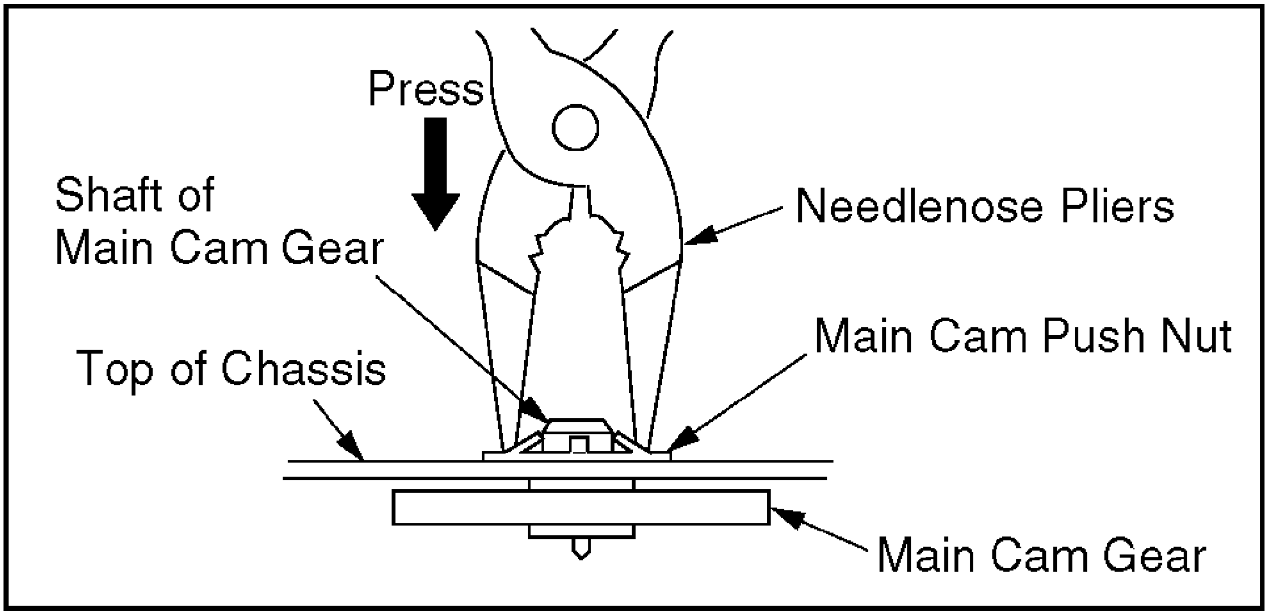
Fig. J3-5


EJECT mode Hole
FF/REW mode Hole
Brake mode Hole
PLAY/CUE /SLOW/STILL mode Hole
Hole A (for EJECT)
Rev mode Hole
Hole B
Support Angle

4. **Main Cam Gear Kit**
   A. **Main Cam Gear is supplied as a Main Cam Gear Kit only (Kit No. VVGS0009). Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.**

5. **Installation of Main Cam Gear and Main Cam Push Nut**
   A. **After installing the Support Angle, install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.**
   There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, install all new parts.

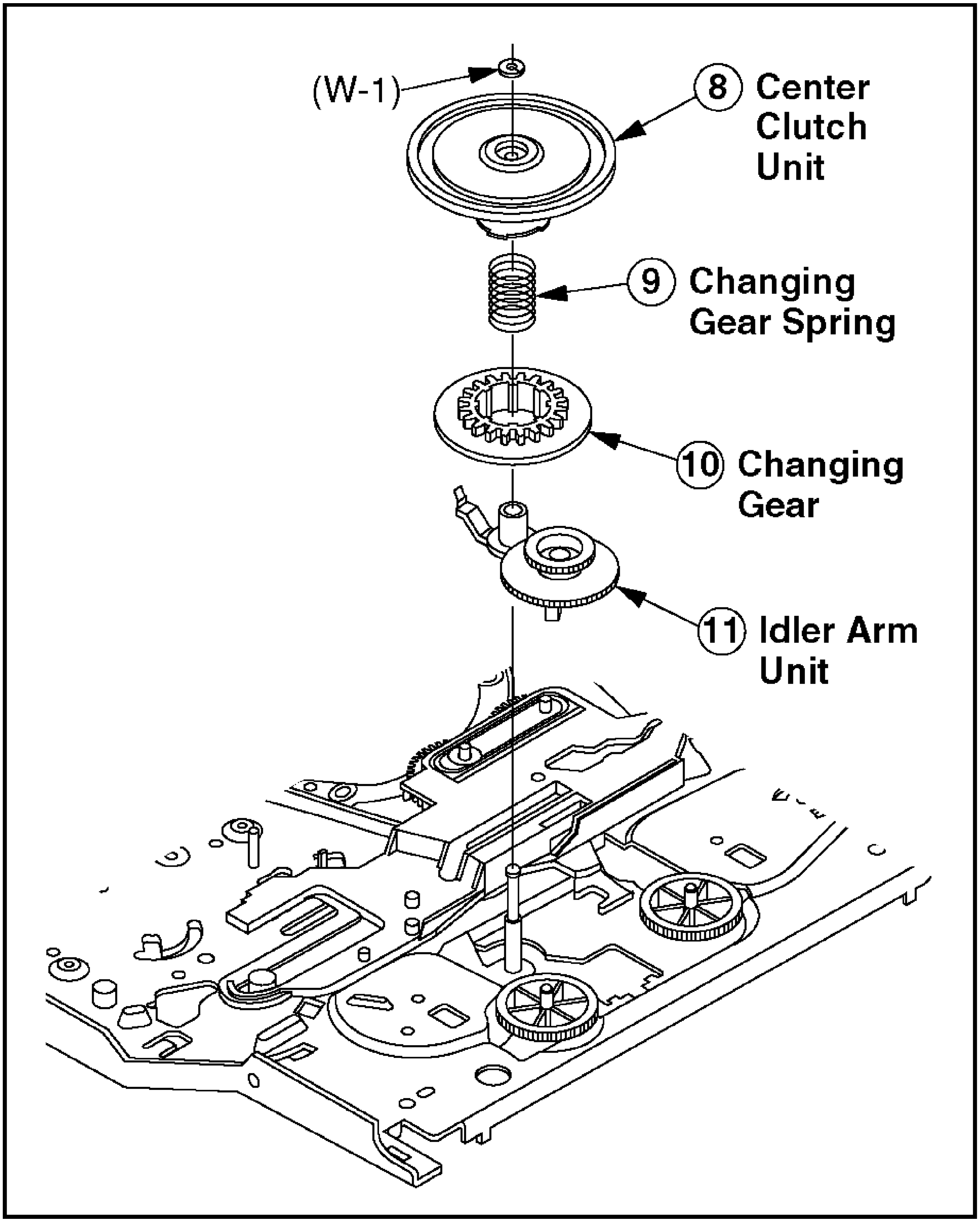
Fig. J3-6


Press
Shaft of
Main Cam Gear
Needlenose Pliers
Top of Chassis
Main Cam Push Nut
Main Cam Gear

6. The Main Cam Push Nut is not reusable. Install a new one.

6.2.6. Center Clutch Unit, Changing Gear Spring, Changing Gear, and Idler Arm Unit

Fig. J4-1

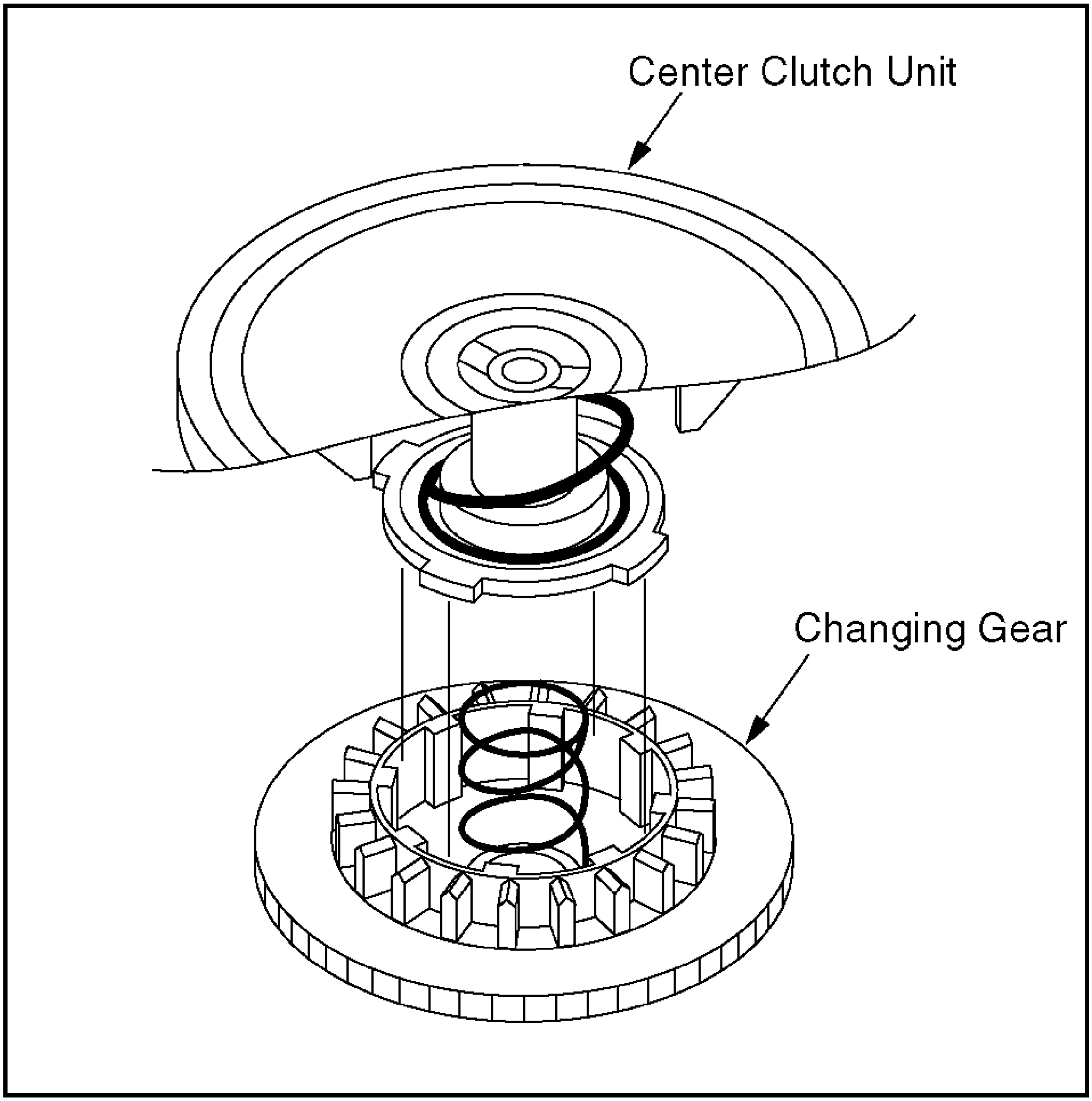

(W-1)
⑧ Center Clutch Unit
⑨ Changing Gear Spring
⑩ Changing Gear
⑪ Idler Arm Unit

6.2.6.1. Reassembly Notes

1. **Installation of Center Clutch Unit**

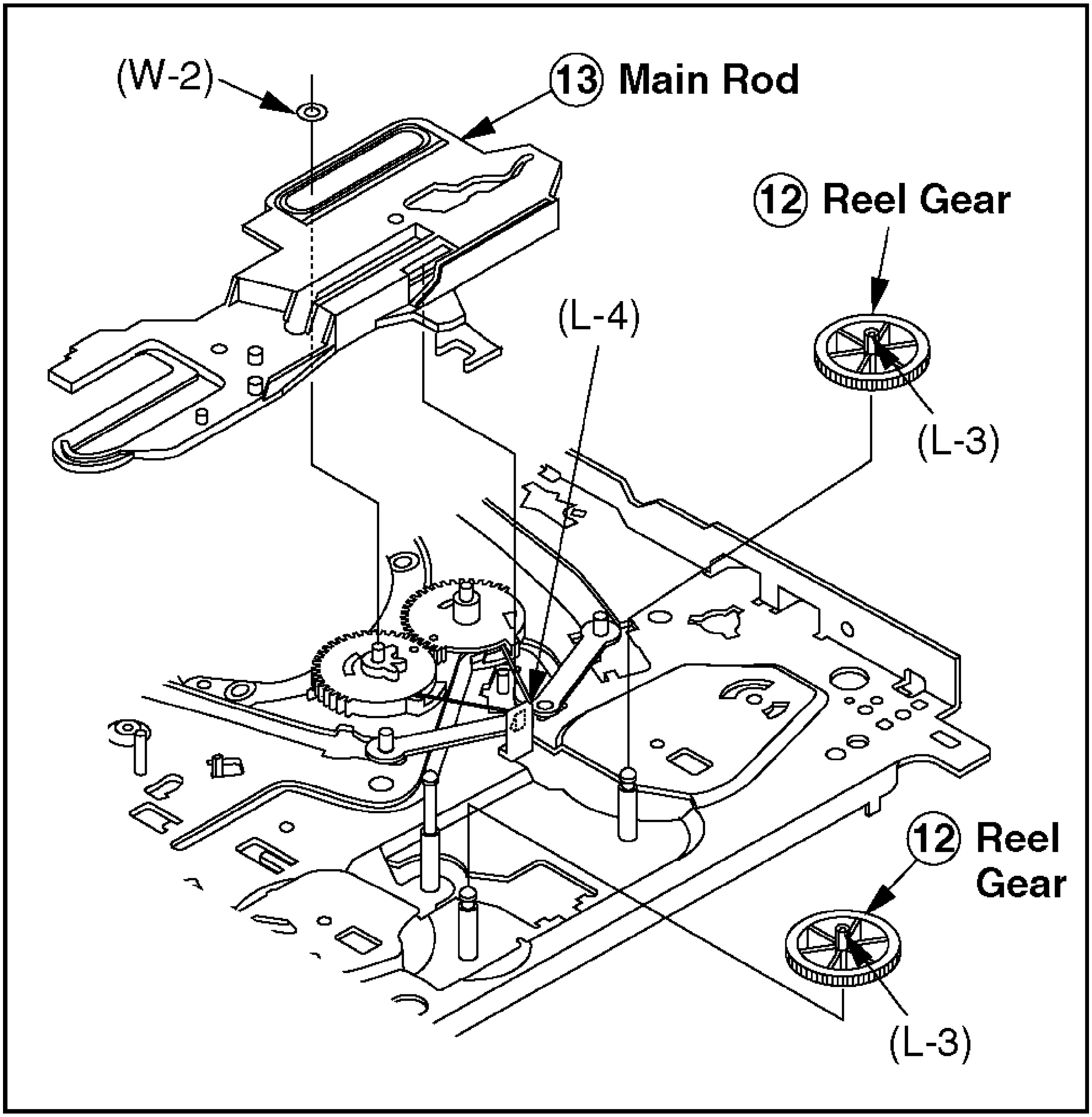
A. Fit the Center Clutch Unit into the Changing Gear.

Fig. J4-2


Center Clutch Unit
Changing Gear

6.2.7. Reel Gear and Main Rod

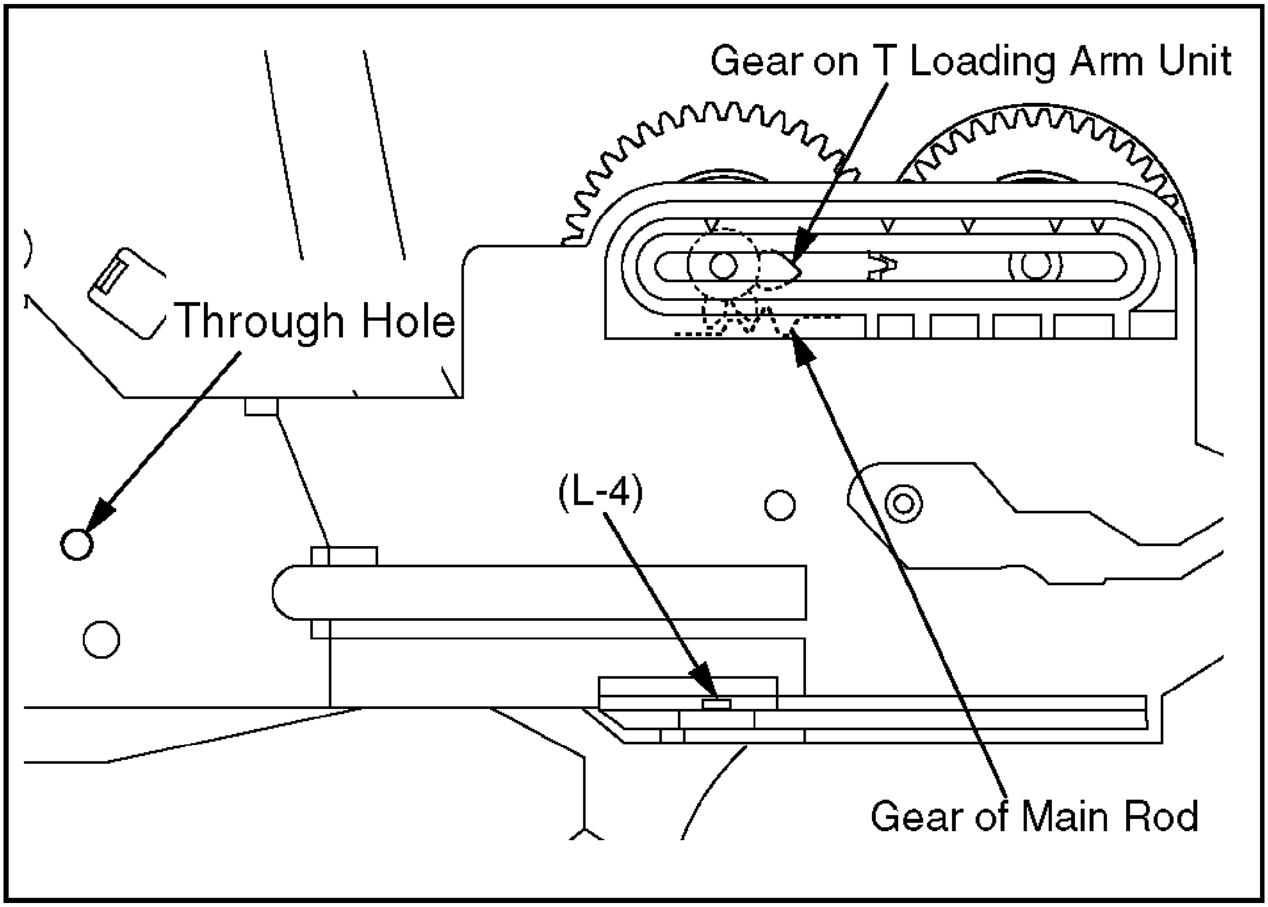
Fig. J5-1


(W-2)
⑬ Main Rod
⑫ Reel Gear
(L-4)
(L-3)
⑫ Reel Gear
(L-3)

6.2.7.1. Reassembly Notes

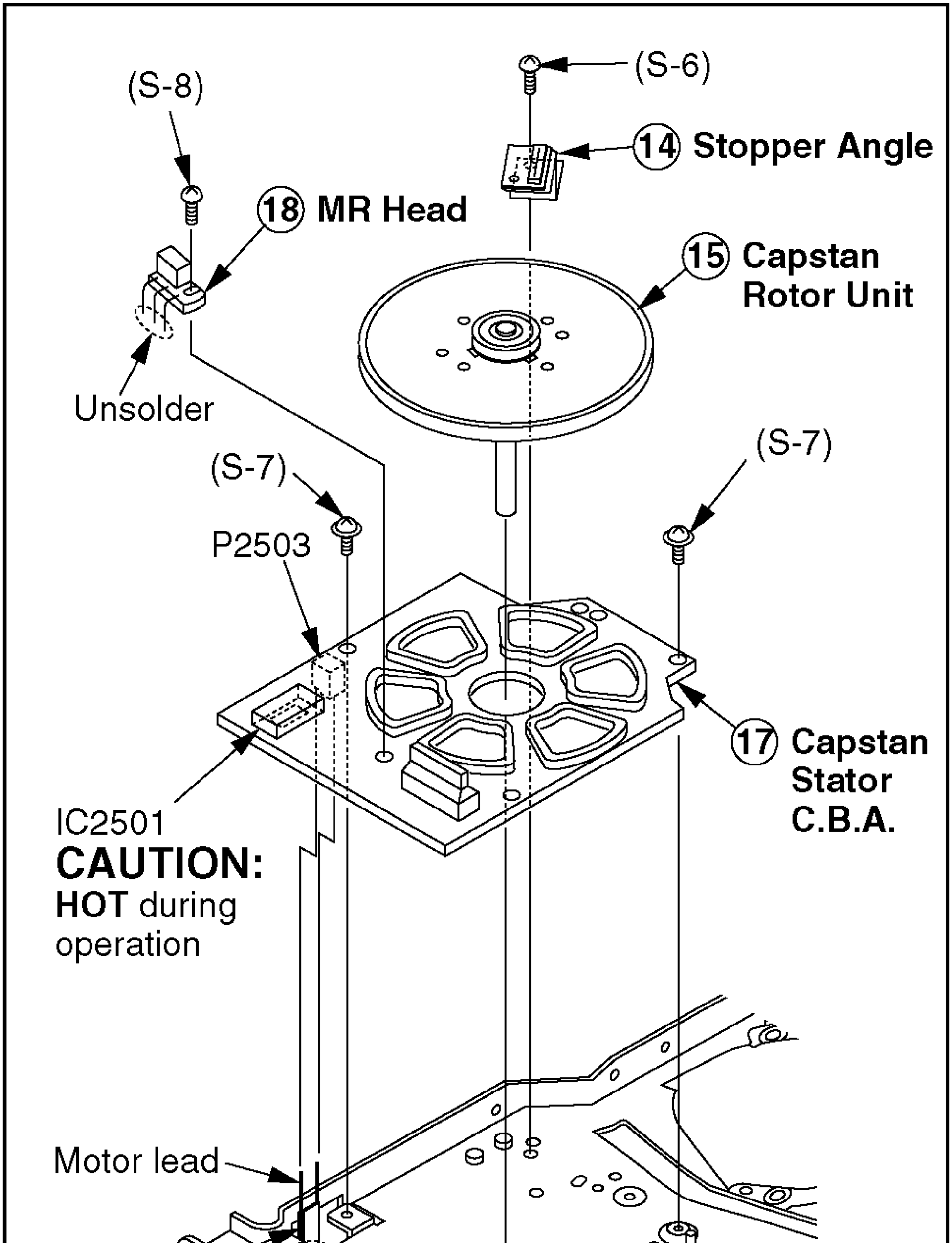
1. **Alignment of Main Rod and T Loading Arm Unit**
   A. **Align the Gear of T Loading Arm Unit with Gear of Main Rod. Confirm that the Hole on Main Rod is a Through Hole with a hole on chassis.**

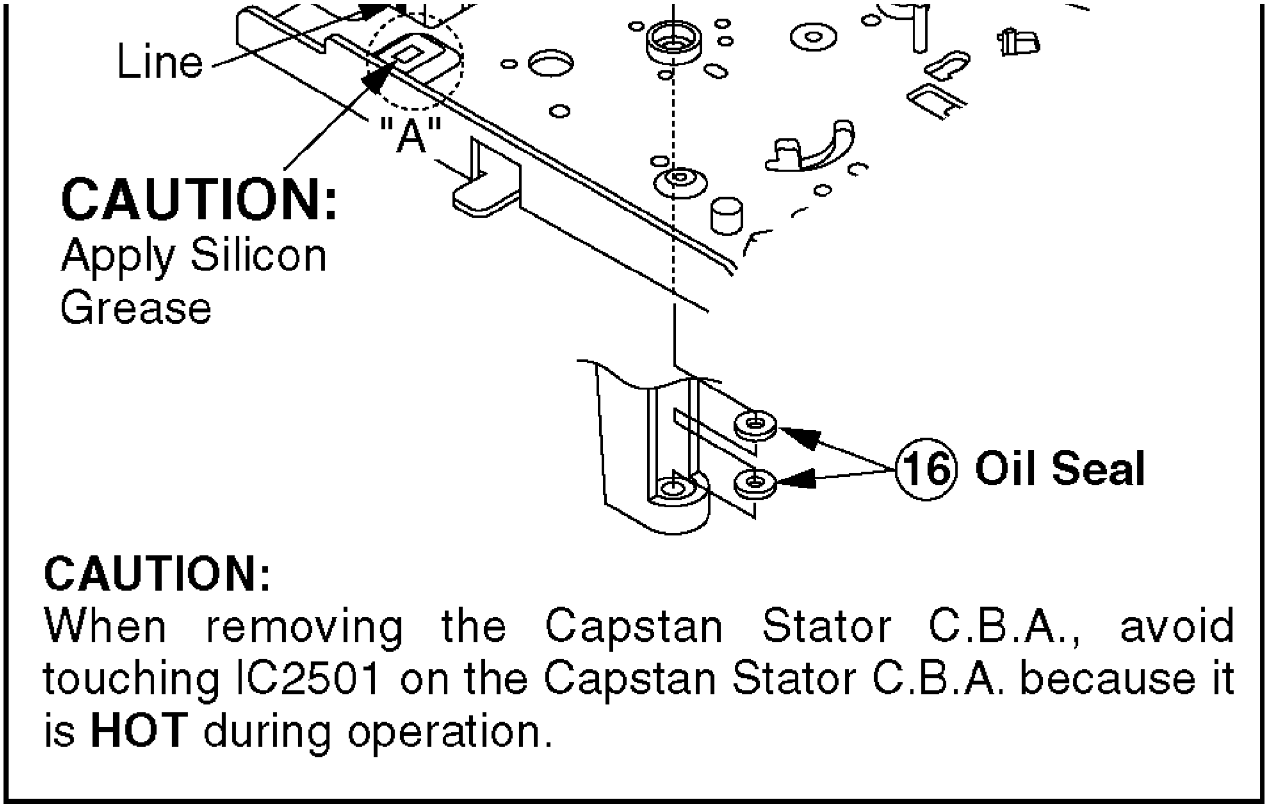
Fig. J5-2


Gear on T Loading Arm Unit
Through Hole
(L-4)
Gear of Main Rod

6.2.8. Stopper Angle, Capstan Rotor Unit, Oil Seal, Capstan Stator C.B.A., and MR Head

Fig. J6-1


(S-6)
(S-8)
⑭ Stopper Angle
⑱ MR Head
⑮ Capstan Rotor Unit
Unsolder
(S-7)
(S-7)
P2503
⑰ Capstan Stator C.B.A.
IC2501
CAUTION:
HOT during operation
Motor lead


Line
"A"
CAUTION:
Apply Silicon Grease
16 Oil Seal

CAUTION:
When removing the Capstan Stator C.B.A., avoid touching IC2501 on the Capstan Stator C.B.A. because it is **HOT** during operation.

6.2.8.1. Reassembly Notes

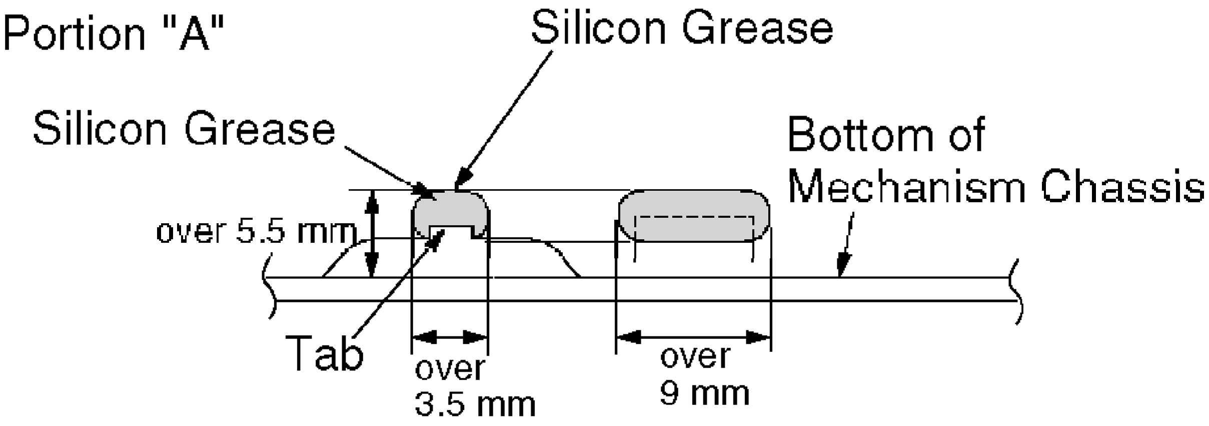
1. **Application of Silicon Grease**

   CAUTION:

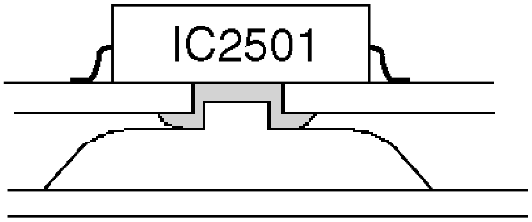
   When installing the IC2501 (AN3845SC, AN3846SC) or Capstan Stator C.B.A., be sure to apply Silicon Grease (VFK1301) as shown. Be careful not to touch other parts with greased portion to prevent grease depletion.

Fig. J6-2

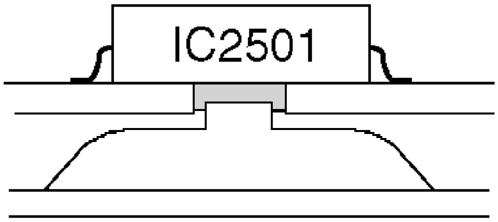
Silicon Grease Application


Portion "A"
Silicon Grease
Silicon Grease
Bottom of Mechanism Chassis
over 5.5 mm
Tab
over 3.5 mm
over 9 mm

① GOOD

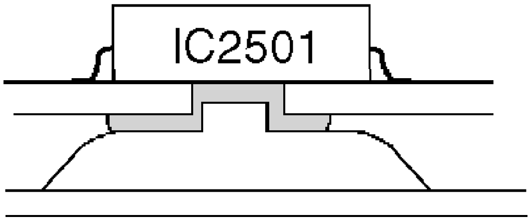


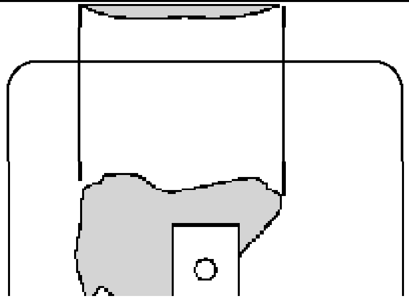
② OK



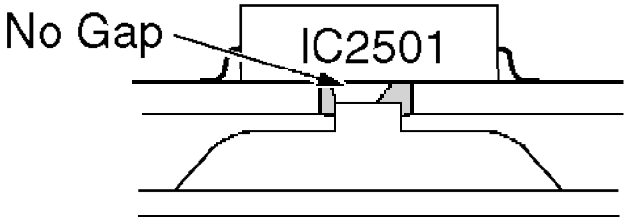
could use more

③ NO GOOD





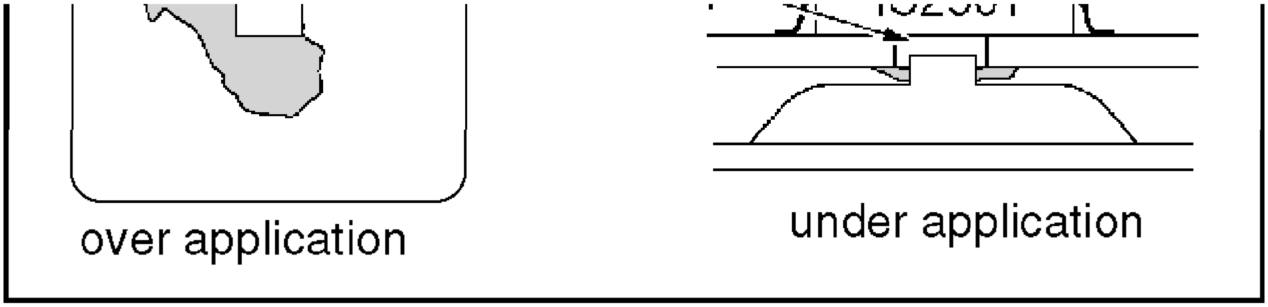
④ NO GOOD


No Gap
IC2501

under application

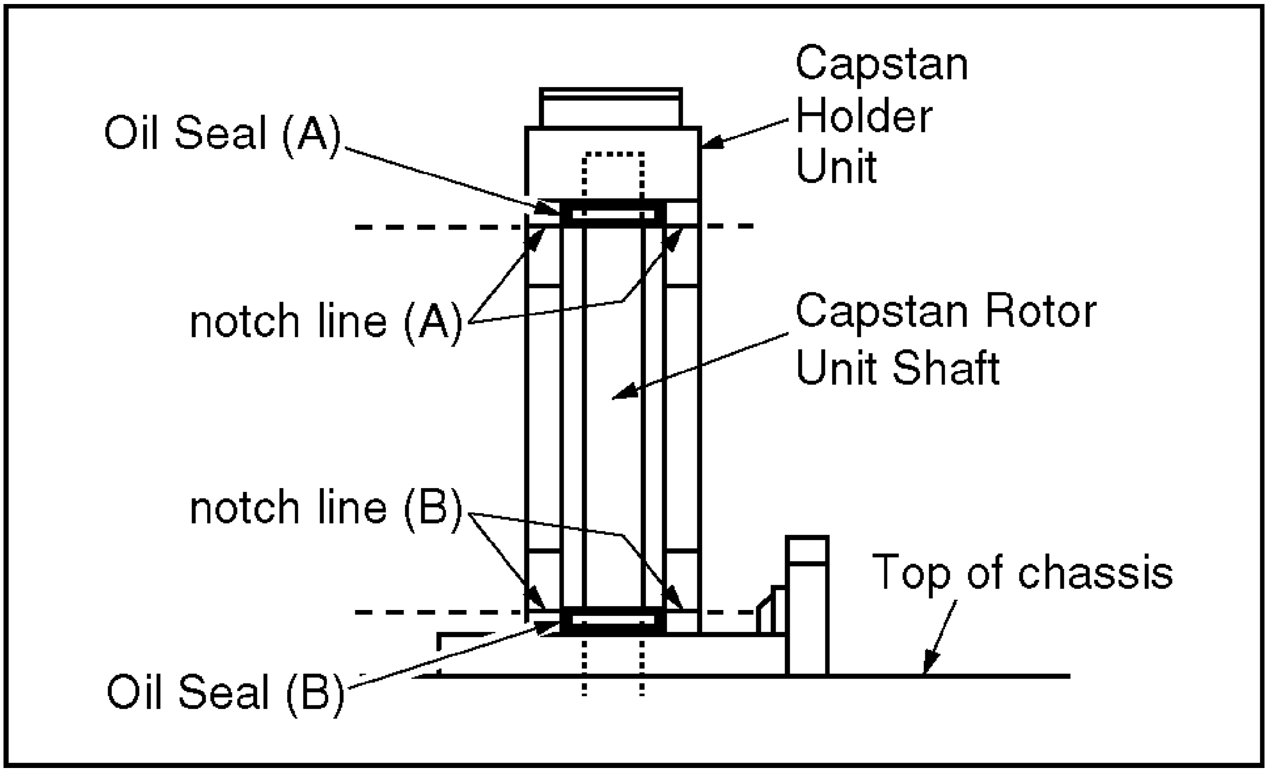
⑤ NO GOOD

No Gap
IC2501


over application
under application

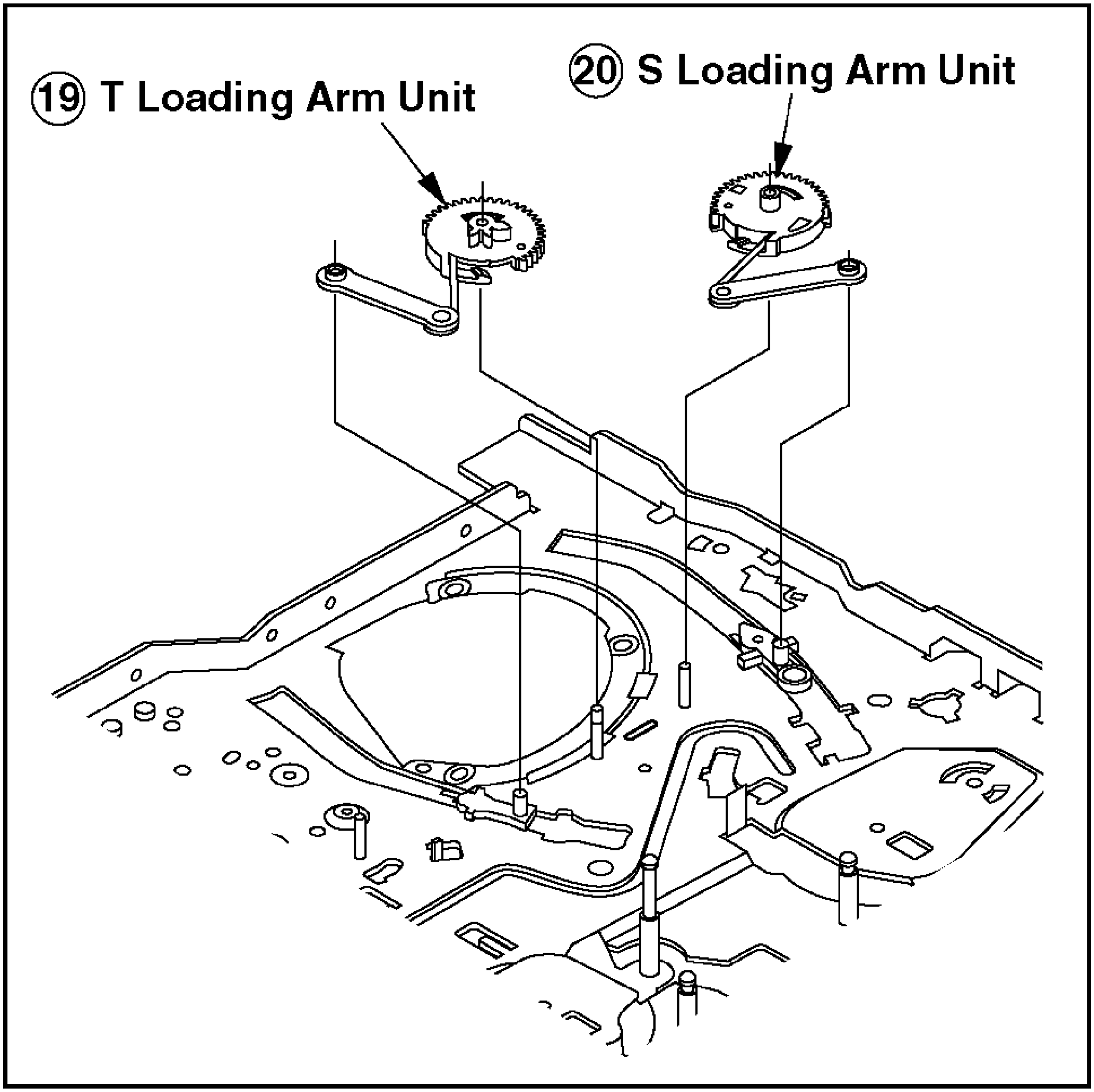
2. **Installation of Capstan Rotor Unit and Oil Seal**
   - **A. Install the 2 Oil Seals into the Capstan Holder Unit. Then, insert the Capstan Rotor Unit Shaft into the hole of the Capstan Holder Unit so that shaft passes through 2 Oil Seals. Be careful not to scratch the Shaft or Capstan Holder Unit.**
   - **B. Align the bottom of Oil Seal (A) with notch line (A). Align the top of Oil Seal (B) with notch line (B).**

Fig. J6-3


Oil Seal (A)
Capstan Holder Unit
notch line (A)
Capstan Rotor Unit Shaft
notch line (B)
Top of chassis
Oil Seal (B)

6.2.9. T Loading Arm Unit and S Loading Arm Unit

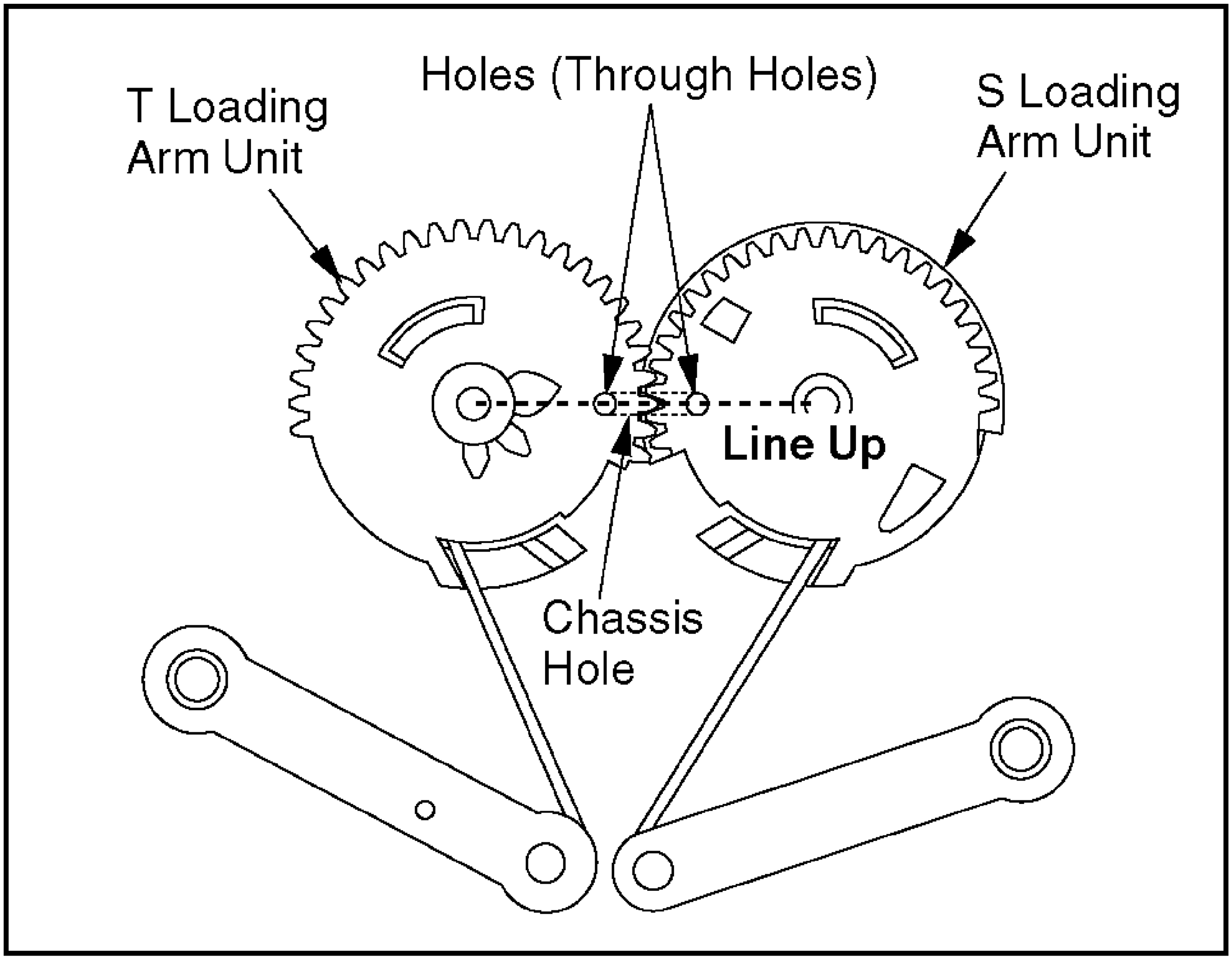
Fig. J7-1


⑲ T Loading Arm Unit
⑳ S Loading Arm Unit

6.2.9.1. Reassembly Notes

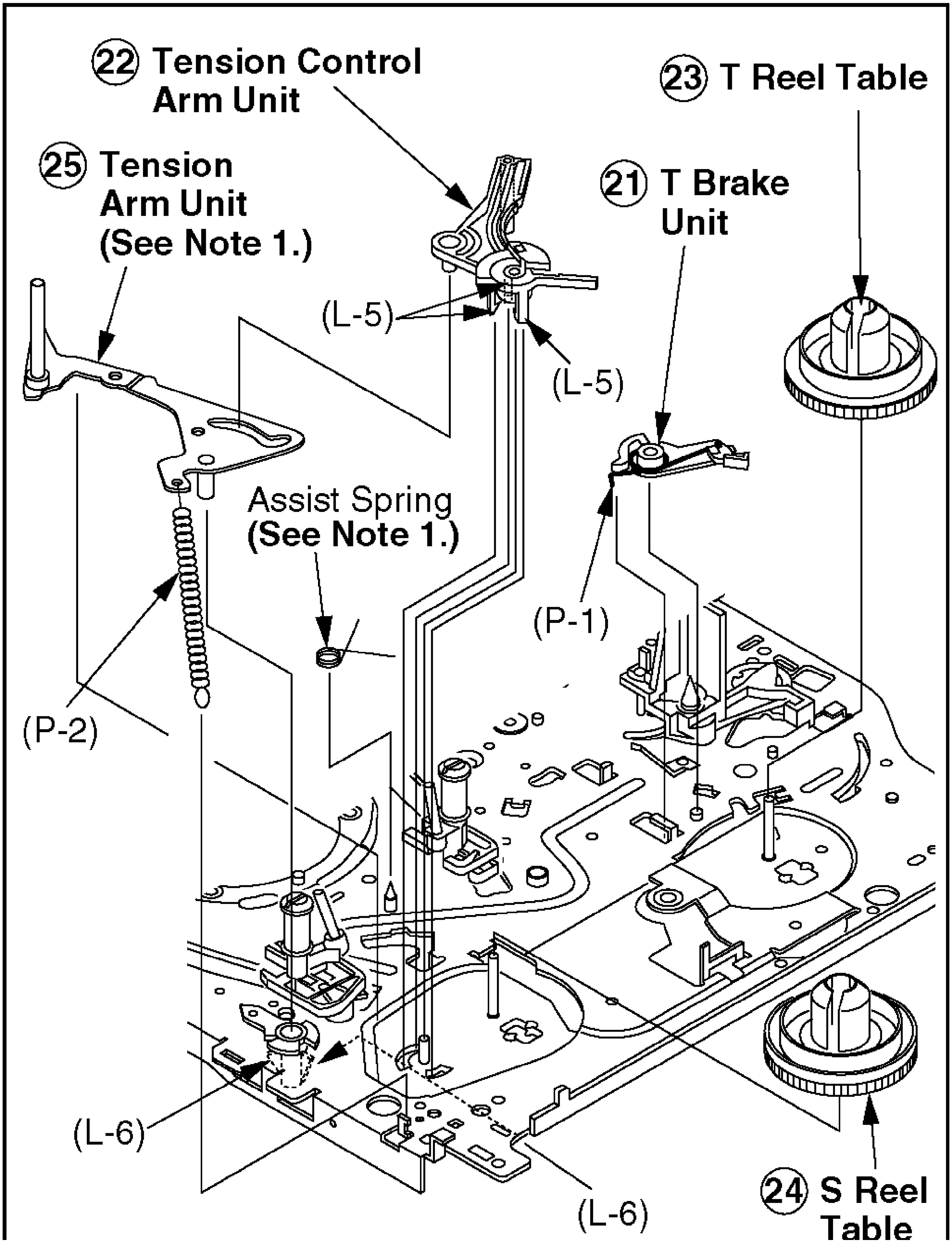
1. **Alignment of T Loading Arm Unit and S Loading Arm Unit**
   - A. **Install the S Loading Arm Unit onto the chassis.**
   - B. **Install the T Loading Arm Unit so that the hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.**
   - C. **Confirm that the holes on the S & T Loading Arm Unit are Through Holes with hole on chassis.**

Fig. J7-2


T Loading Arm Unit
Holes (Through Holes)
S Loading Arm Unit
Line Up
Chassis Hole

6.2.10. T Brake Unit, Tension Control Arm Unit, T Reel Table, S Reel Table, and Tension Arm Unit

Fig. J8-1


㉒ Tension Control Arm Unit
㉓ T Reel Table
㉕ Tension Arm Unit (See Note 1.)
㉑ T Brake Unit
(L-5)
(L-5)
Assist Spring (See Note 1.)
(P-1)
(P-2)
(L-6)
(L-6)
㉔ S Reel Table

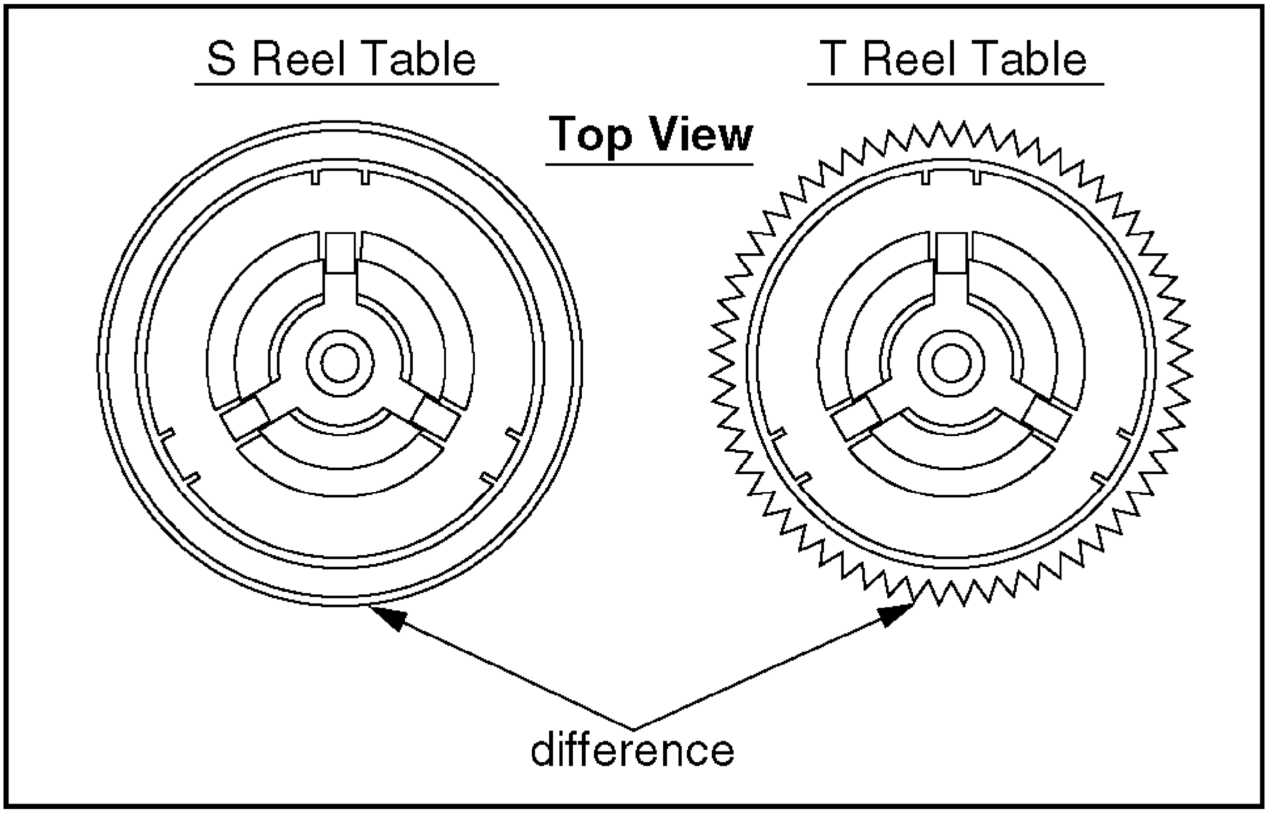
Note:

1. Only for early products; the Assist Spring is used.
   When servicing the Assist Spring or the Tension Arm Unit, replace only the Tension Arm Unit with a new one and remove the Assist Spring.

6.2.10.1. Reassembly Notes

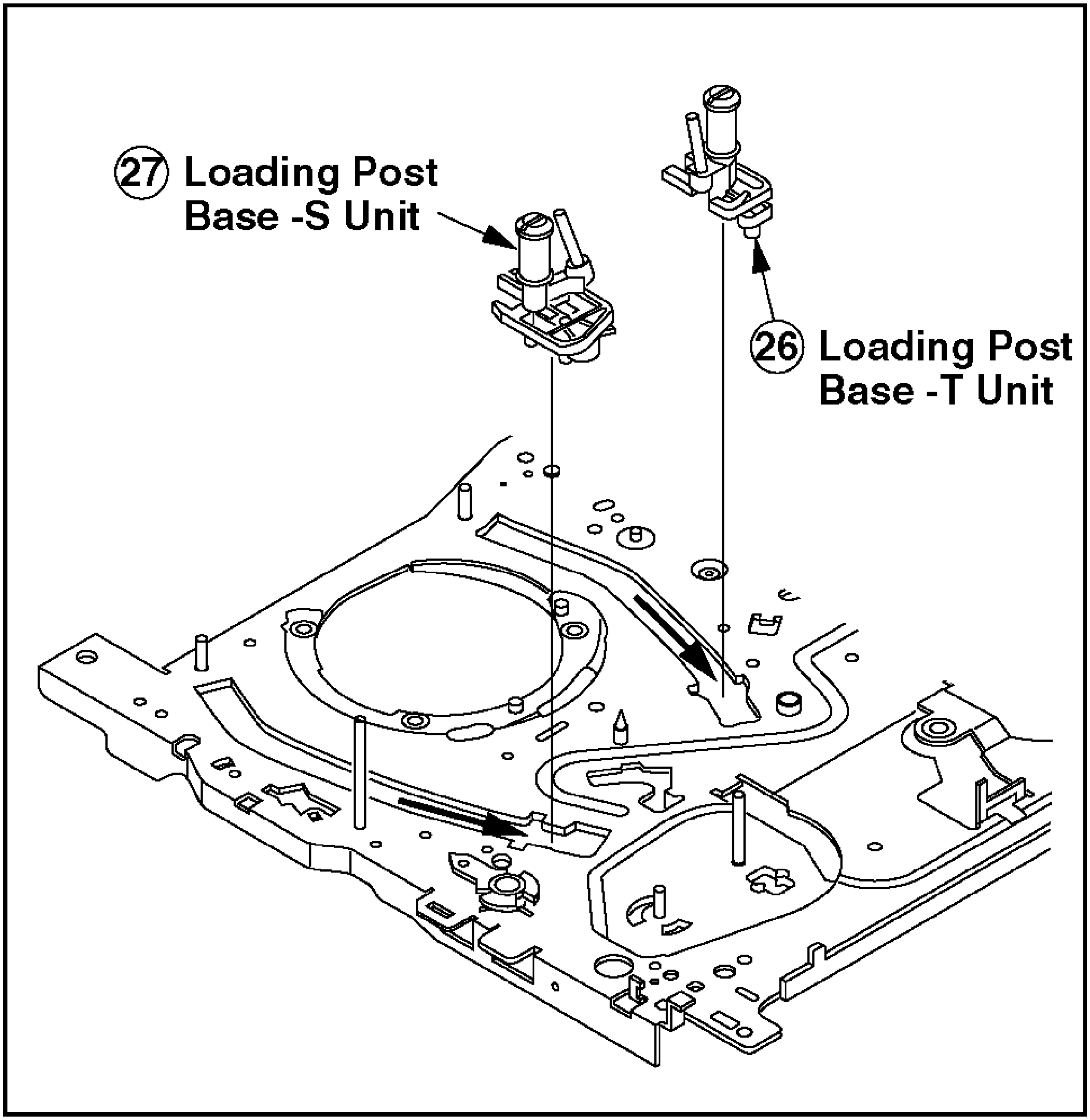
1. **How to distinguish between S Reel Table and T Reel Table**

Fig. J8-2


S Reel Table
T Reel Table
Top View
difference

6.2.11. Loading Post Base -T Unit and Loading Post Base -S Unit

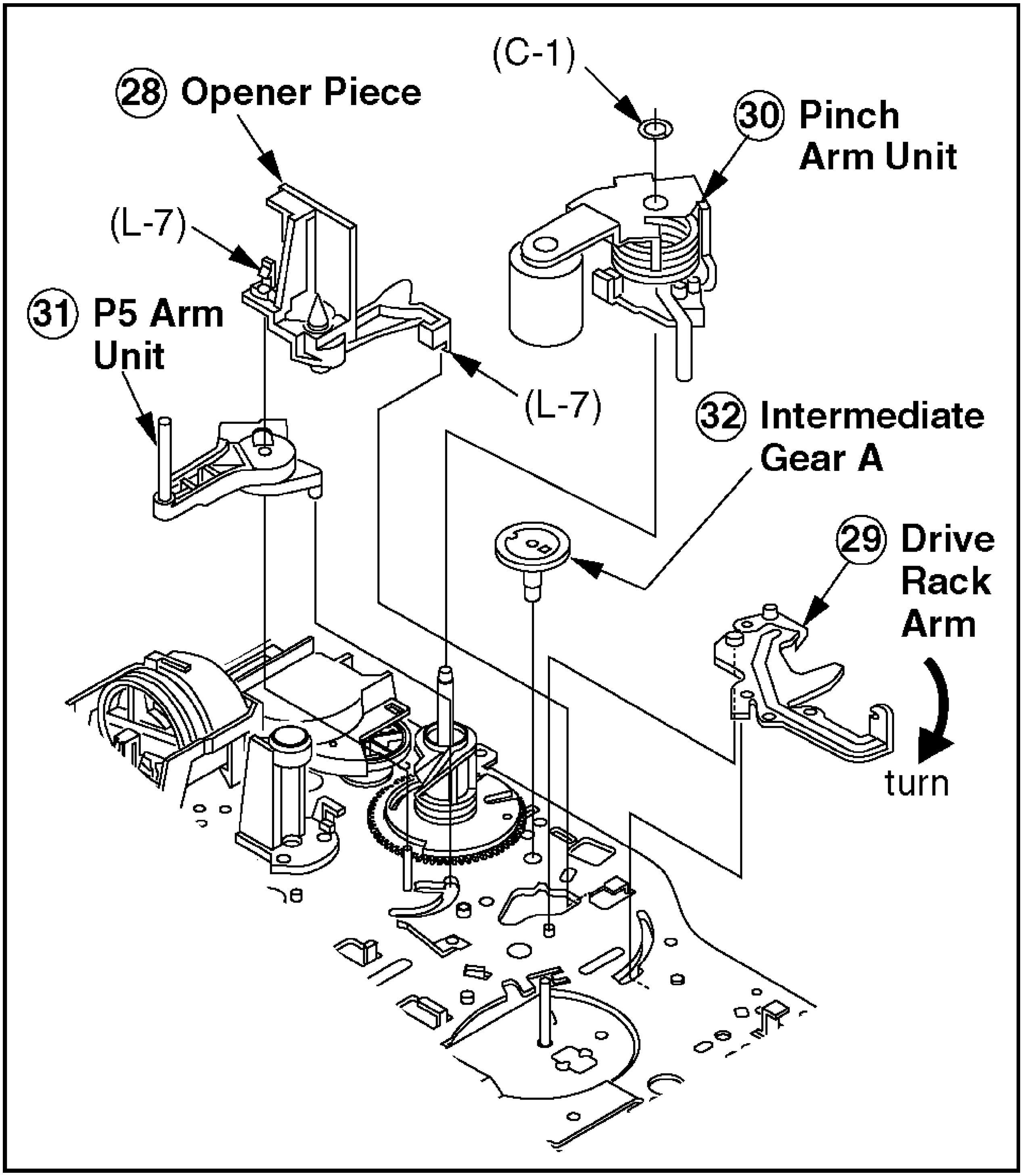
Fig. J9



㉗ Loading Post
Base -S Unit
㉖ Loading Post
Base -T Unit

6.2.12. Opener Piece, Drive Rack Arm, Pinch Arm Unit, P5 Arm Unit, and Intermediate Gear A

Fig. J10-1



(C-1)
㉘ Opener Piece
㉚ Pinch Arm Unit
(L-7)
㉛ P5 Arm Unit
(L-7)
㉜ Intermediate Gear A
㉙ Drive Rack Arm
turn

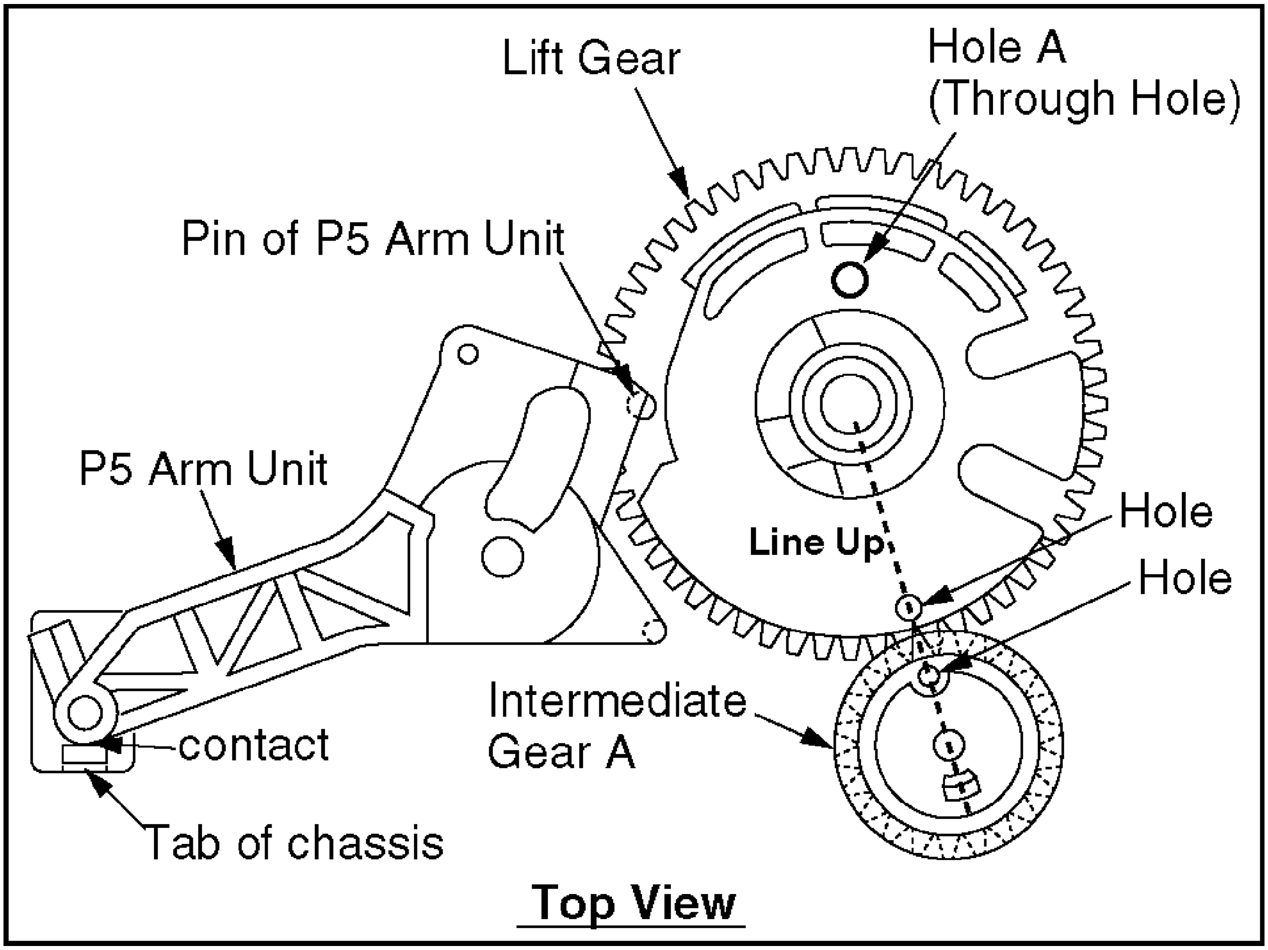
6.2.12.1. Reassembly Notes

1. Installation/Alignment of Intermediate Gear A, Lift Gear and P5 Arm Unit

A. Rotate the Lift Gear so that Hole A on Lift Gear is a Through Hole with a hole on chassis.

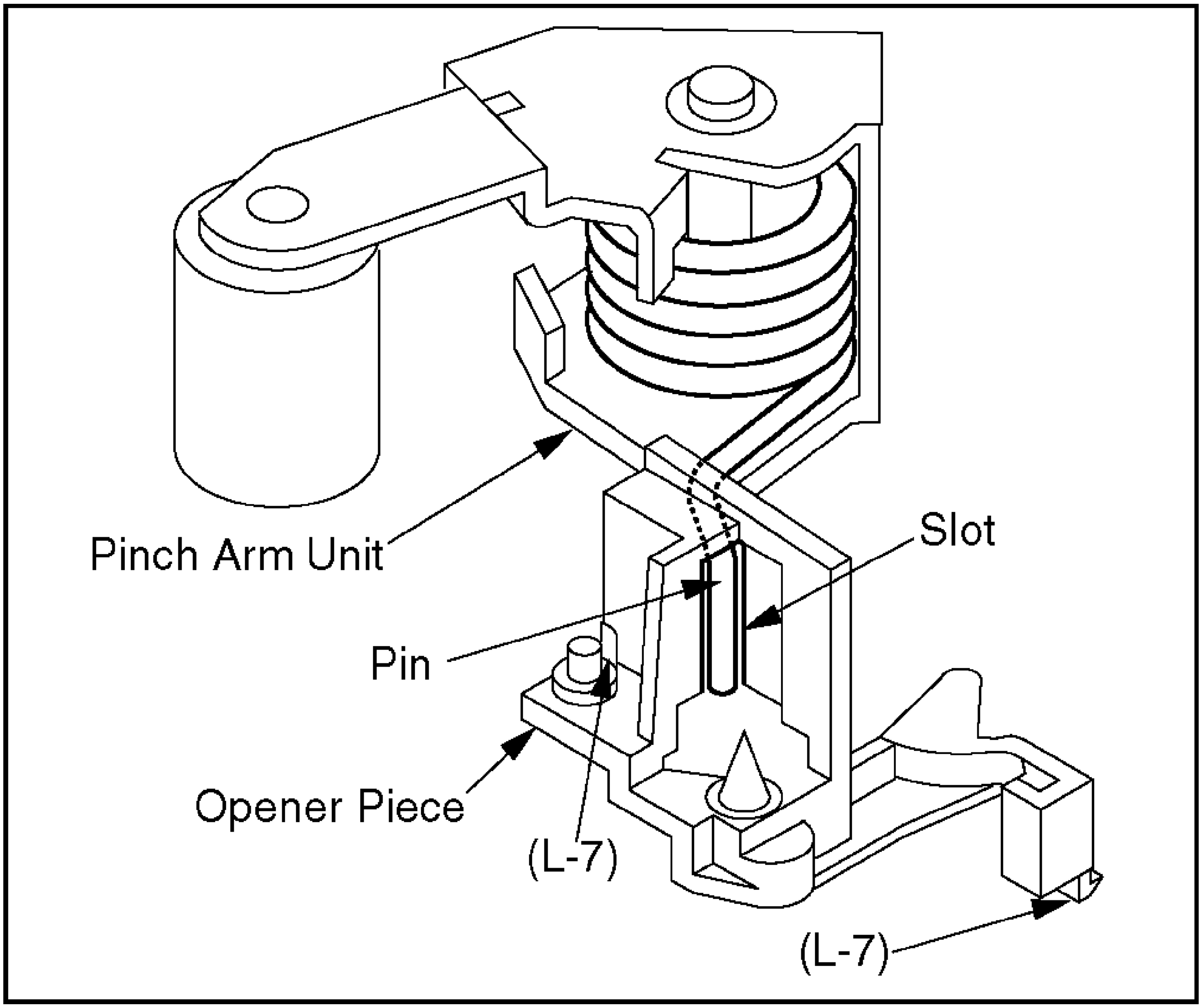
B. **Install the Intermediate Gear A so that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.**
C. **Install the P5 Arm Unit so that it contacts with the tab of chassis.**

Fig. J10-2


Lift Gear
Hole A
(Through Hole)
Pin of P5 Arm Unit
P5 Arm Unit
Line Up
Hole
Hole
Intermediate
Gear A
contact
Tab of chassis
Top View

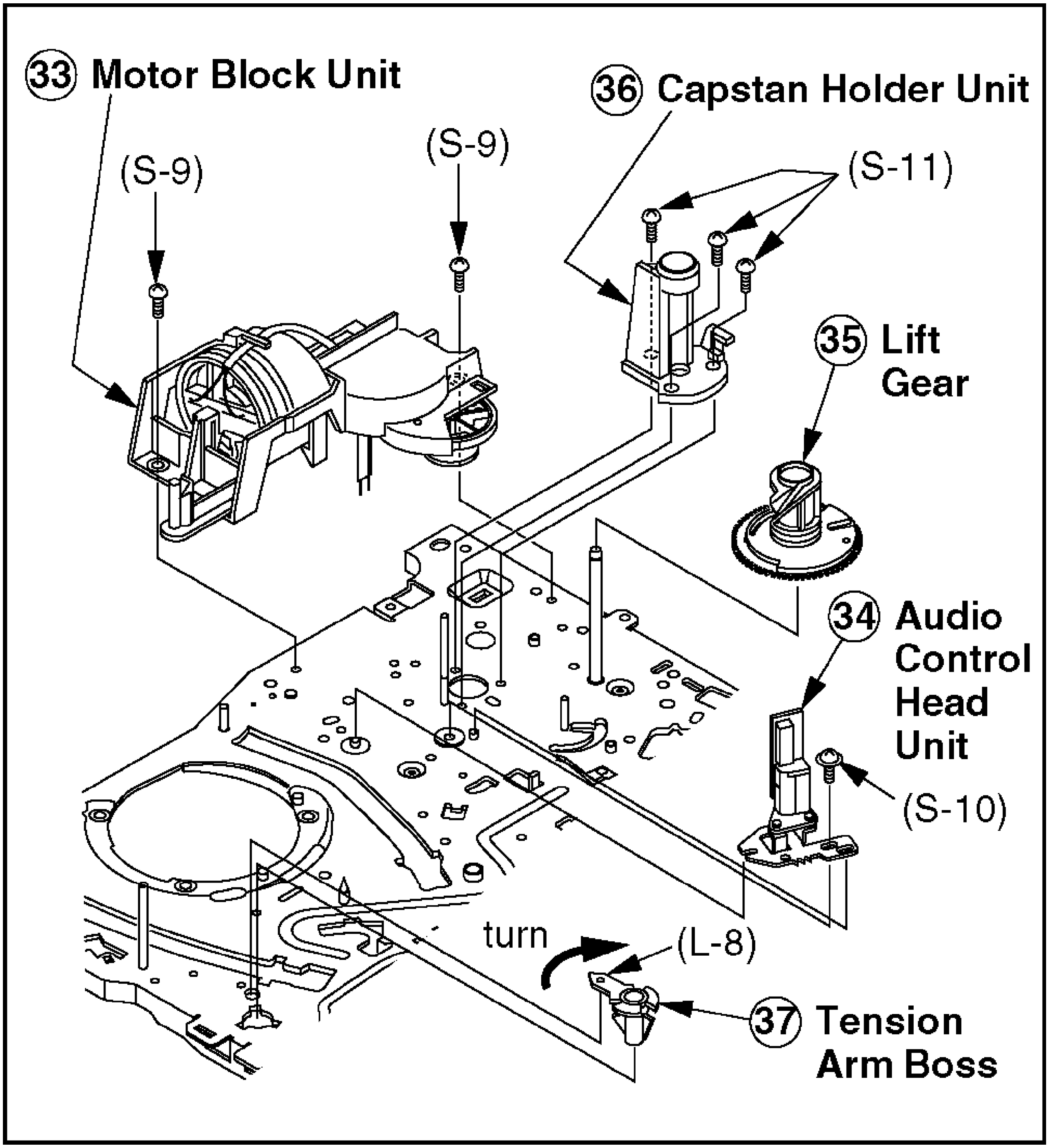
2. **Installation of Opener Piece**
   A. **Install the Opener Piece so that the slot of the Opener Piece is inserted to the Pin of Pinch Arm Unit**

Fig. J10-3


Pinch Arm Unit
Slot
Pin
Opener Piece
(L-7)
(L-7)

6.2.13. Motor Block Unit, Audio Control Head Unit, Lift Gear, Capstan Holder Unit, and Tension Arm Boss

Fig. J11



33 Motor Block Unit
(S-9)
(S-9)
36 Capstan Holder Unit
(S-11)
35 Lift Gear
34 Audio Control Head Unit
(S-10)
turn
(L-8)
37 Tension Arm Boss

6.3. CASSETTE UP ASS'Y SECTION

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling.
When reassembling, perform the step(s) in the reverse order.

Step/Loc. No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	------------	Top Plate	K1-1	(L-1), (L-2)	
②	1	Wiper Arm Unit	K1-1	2(L-3)	Gear Alignment
③	1,2	Holder Unit	K1-1	-	
④	------------	Opener Lever	K2	2(L-4)	
⑤	1,2,3,4	Drive Rack Unit	K2	-	

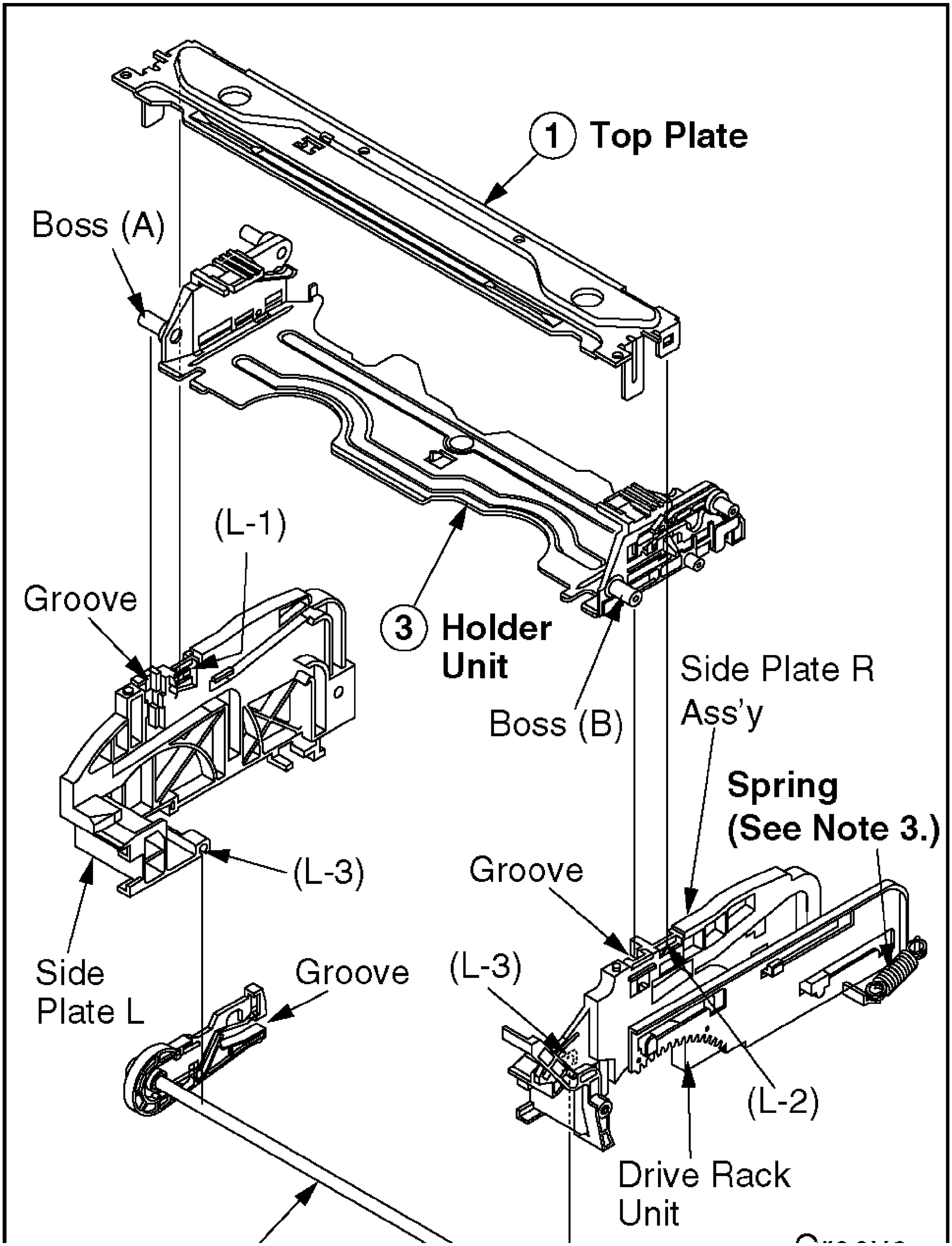
A B C D E F

How to read chart shown above:

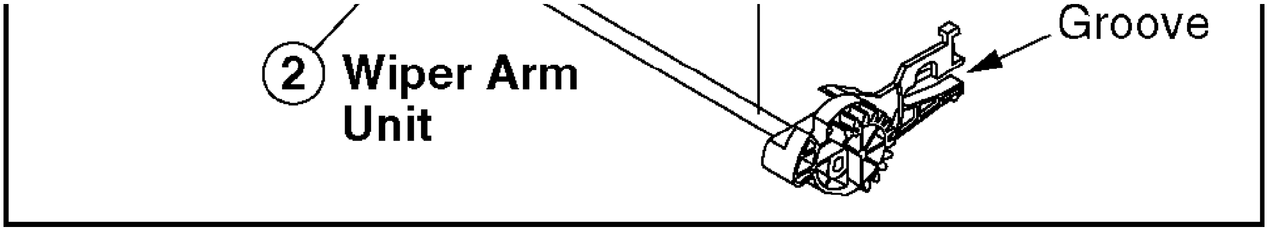
A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
These numbers are also used as the identification (location) No. of parts in Figures.
B: Steps to be completed prior to the current step.
C: Part to be removed or installed.
D: Fig. No. showing Procedure or Part Location.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged or unsoldered.
(S-1) = Screw (S-1), (L-1) = Locking Tab (L-1),
(W-1) = Washer (W-1), (P-1) = Spring (P-1),
(C-1) = Cut Washer (C-1)
F: Alignment/Adjustment which is required when installing or replacing each Parts.

6.3.1. Top Plate, Wiper Arm Unit, and Holder Unit

Fig. K1-1



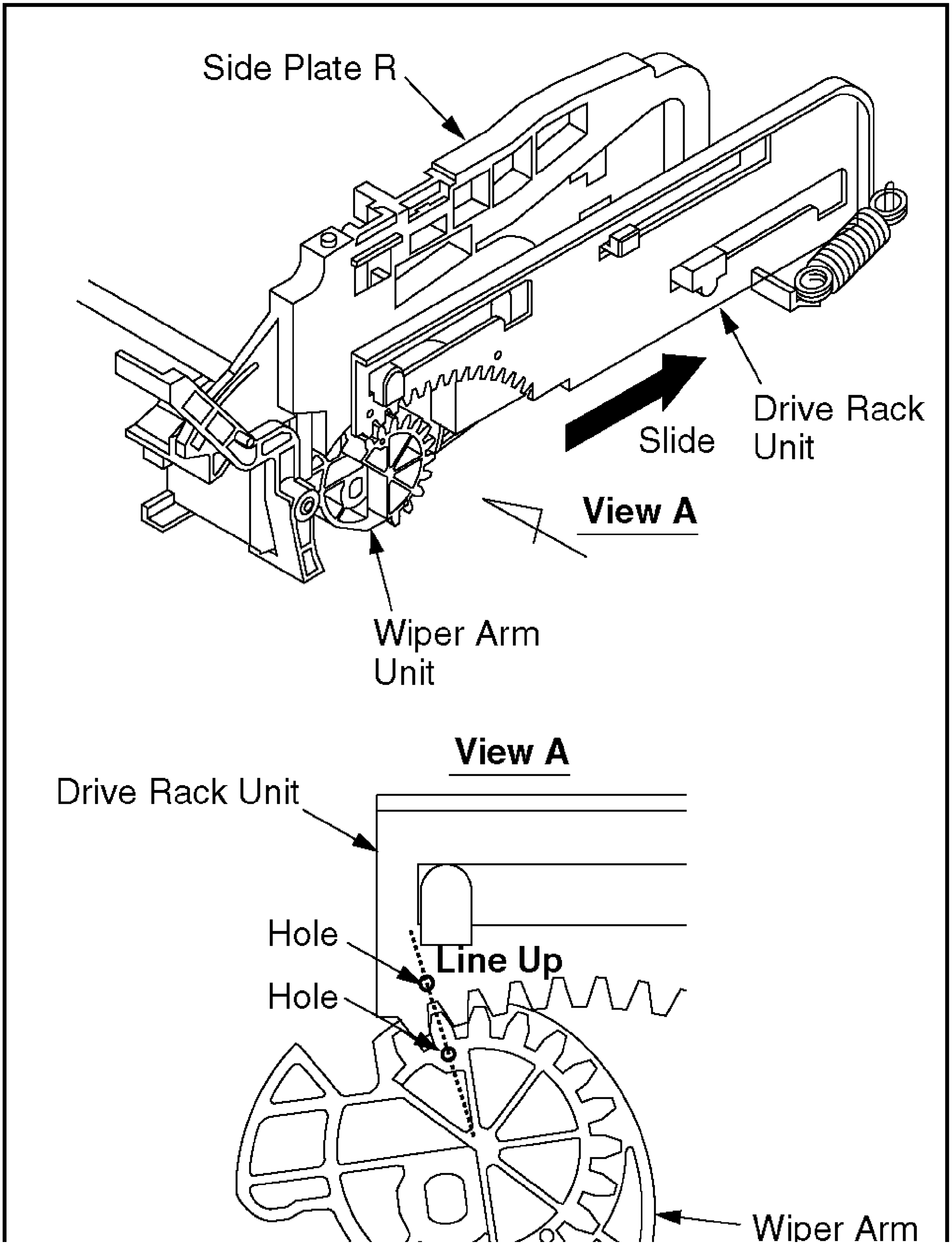
① Top Plate
Boss (A)
(L-1)
Groove
③ Holder Unit
Boss (B)
Side Plate R Ass'y
Spring (See Note 3.)
(L-3)
Groove
Side Plate L
Groove
(L-3)
(L-2)
Drive Rack Unit

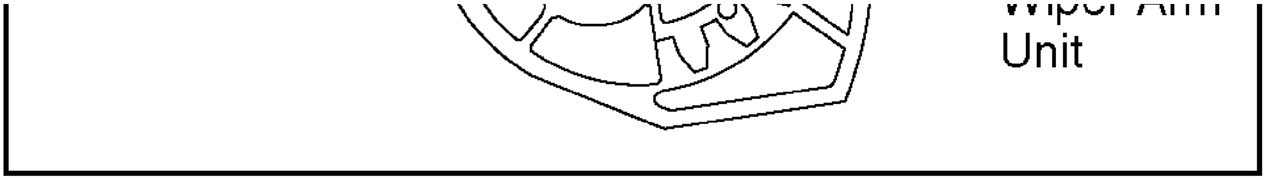


6.3.1.1. Reassembly Notes

1. **Alignment of Wiper Arm Unit and Drive Rack Unit**
   - **A. Slide the Drive Rack Unit to the far right as indicated by the arrow.**
   - **B. Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.**

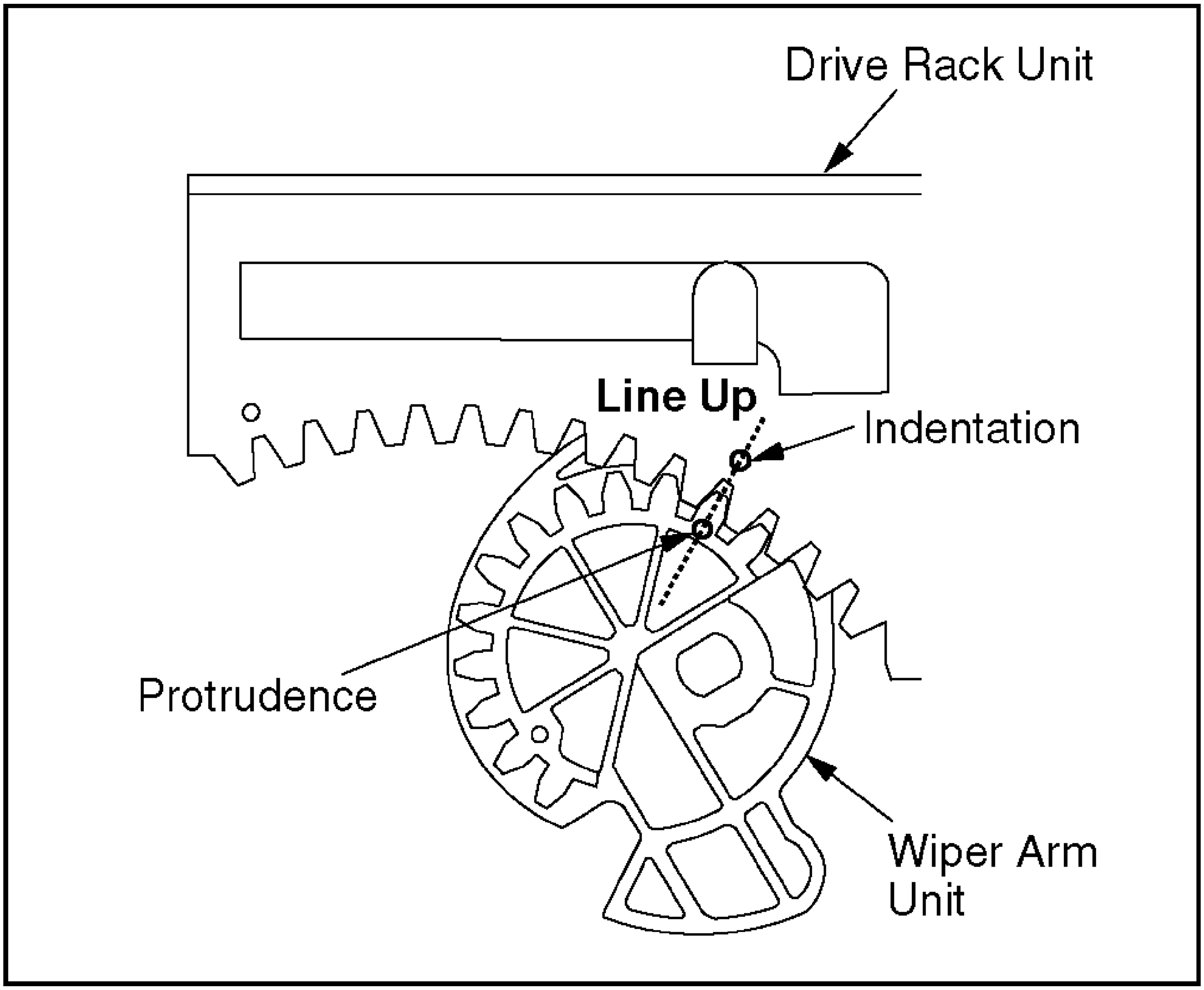
Fig. K1-2


Side Plate R
Drive Rack Unit
Slide
View A
Wiper Arm Unit
View A
Drive Rack Unit
Hole
Line Up
Hole
Wiper Arm



2. **Installation of Holder Unit**
   - A. **Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.**
   - B. **Insert Holder Unit boss (A) and (B) into the grooves as shown in Fig. K1-1.**
   - C. **Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.**

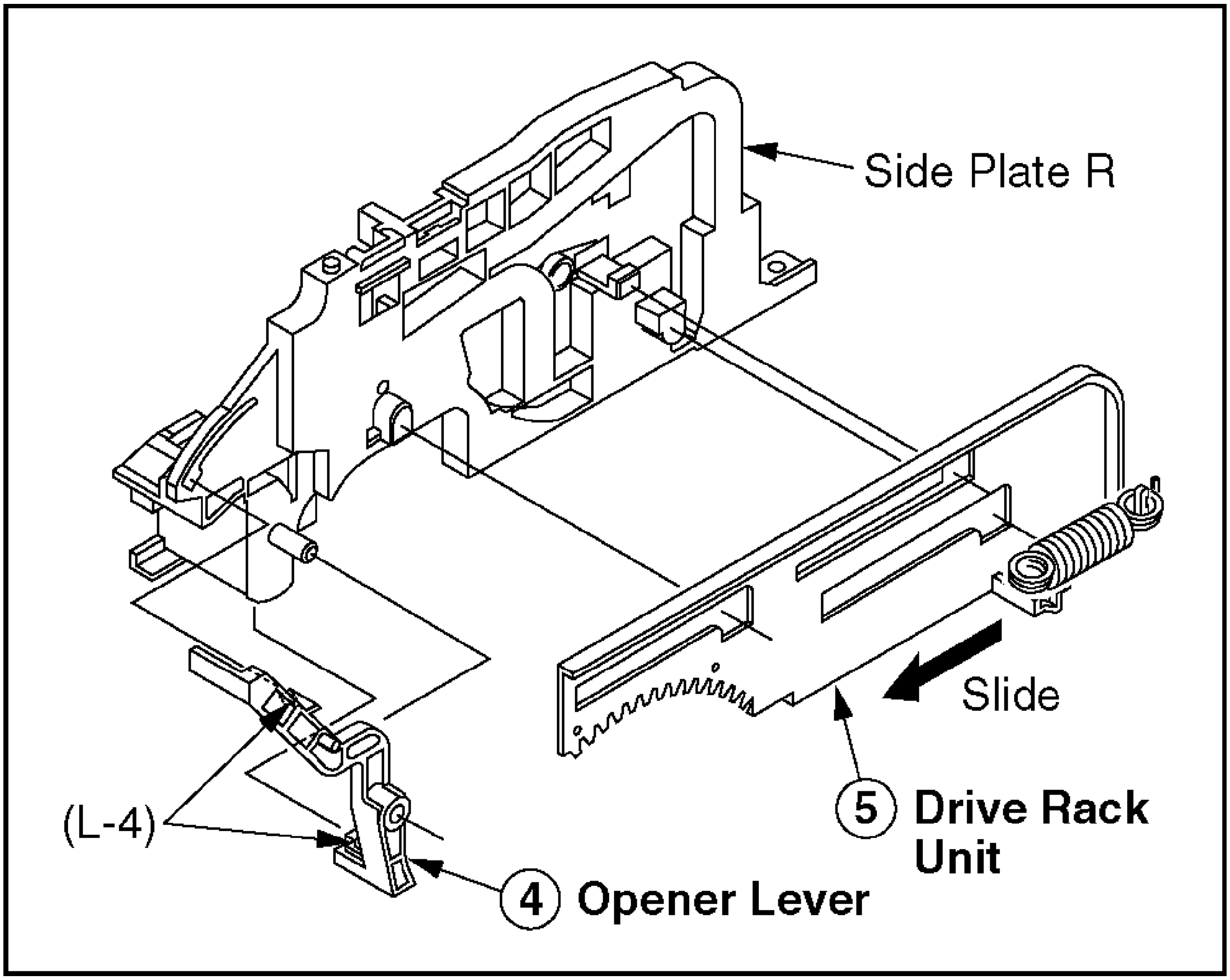
Fig. K1-3


Drive Rack Unit
Line Up
Indentation
Protrudence
Wiper Arm Unit

3. Make sure to hook the spring to the Drive Rack Arm of Mechanism chassis.

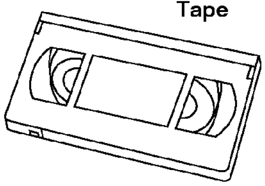
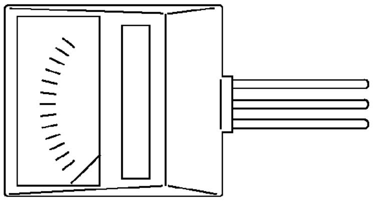
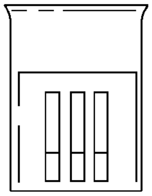
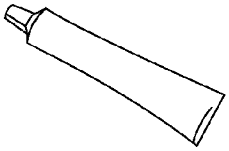
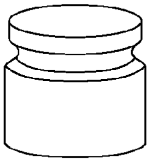
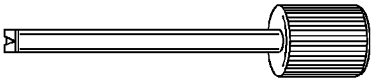
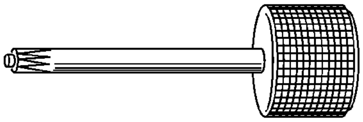
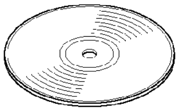
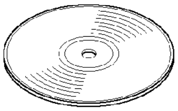
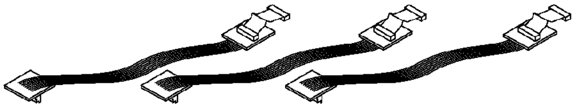
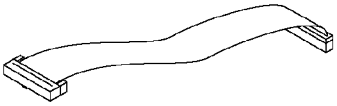
6.3.2. Opener Lever and Drive Rack Unit

Fig. K2


Side Plate R
Slide
(L-4)
5 Drive Rack Unit
4 Opener Lever

7. ADJUSTMENT PROCEDURES

7.1. SERVICE FIXTURES AND TOOLS

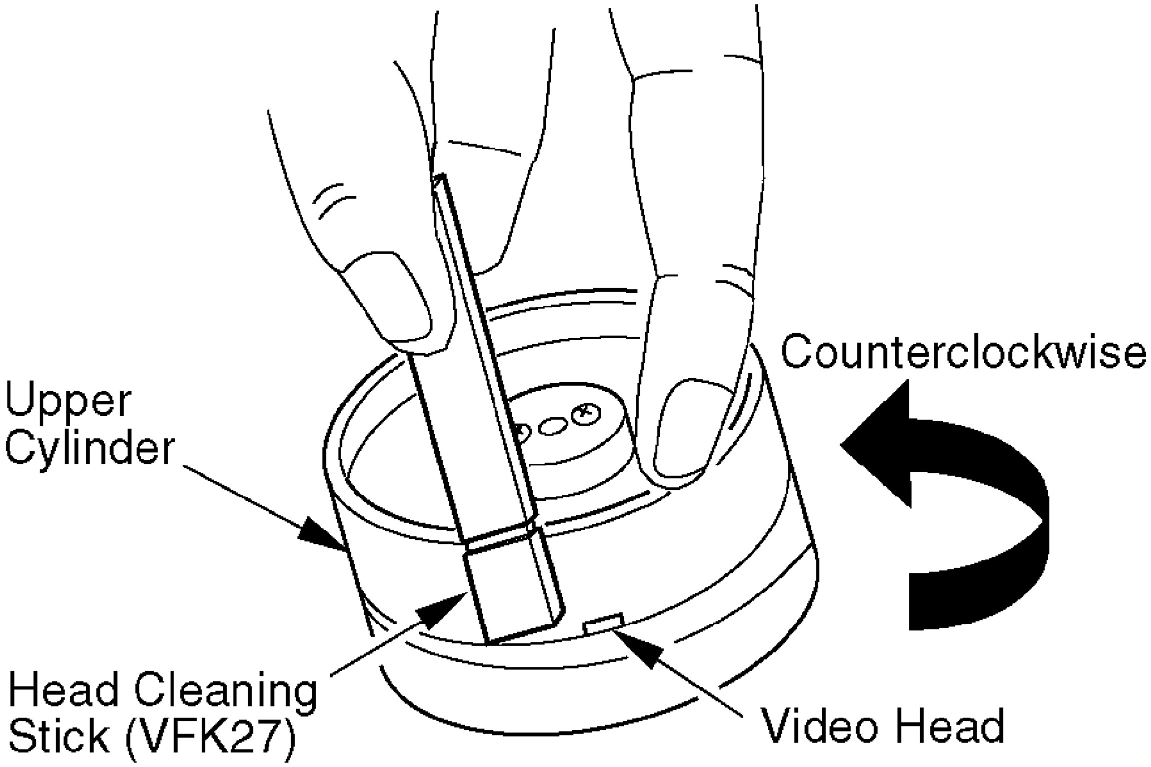
VFMS0003H6 **VHS Alignment Tape**  Video: Color Bar & Monoscope Audio: 6kHz(MONO)	**Back Tension Meter (Made in USA., Purchase Locally)** 	**VFK27** **Head Cleaning Stick** 
VFK1301 **Silicon Grease** 	**VFKS0081** **Grease** 	**VFK0329** **Post Adjustment Driver** 
VFK0330 **H-Position Adjustment Driver** 	**DVDT-S01** **DVD Test Disc** 	**Firmware Disc for DVD**  Not supplied
LSUA0031 **Extension Cable (3pcs)** 	**Connector Cable (IDE Cable)**  Not supplied (Purchase locally)	

7.2. MECHANICAL ADJUSTMENT

7.2.1. CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol. When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

Fig. M1



Note:

**A. Do not rub vertically or apply excess pressure to the Video Heads.
Do not turn the Upper Cylinder Unit clockwise while cleaning.**

B. After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

7.2.2. ADJUSTMENT PROCEDURES

7.2.2.1. BACK TENSION CONFIRMATION

Purpose:

To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment:

1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.

2) If the tape tension is too high, the tape will soon be damaged.

Equipment Required:

Back Tension Meter (Made in U.S.A., Purchase Locally)

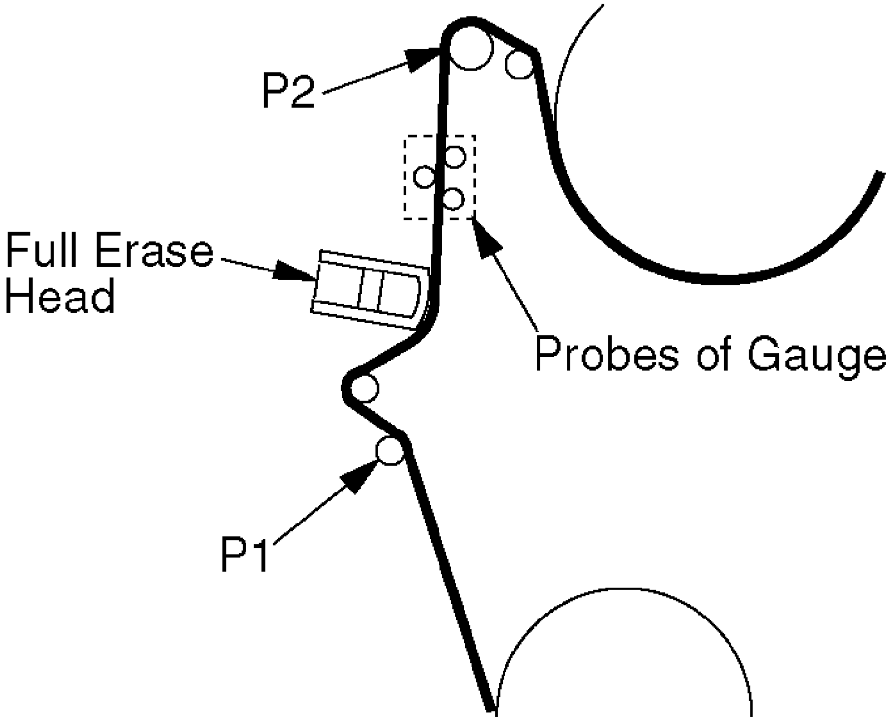
VHS Cassette Tape (120-Minute Tape)

Specification:

20 gf±2.5 gf
(0.196 N±0.025 N)

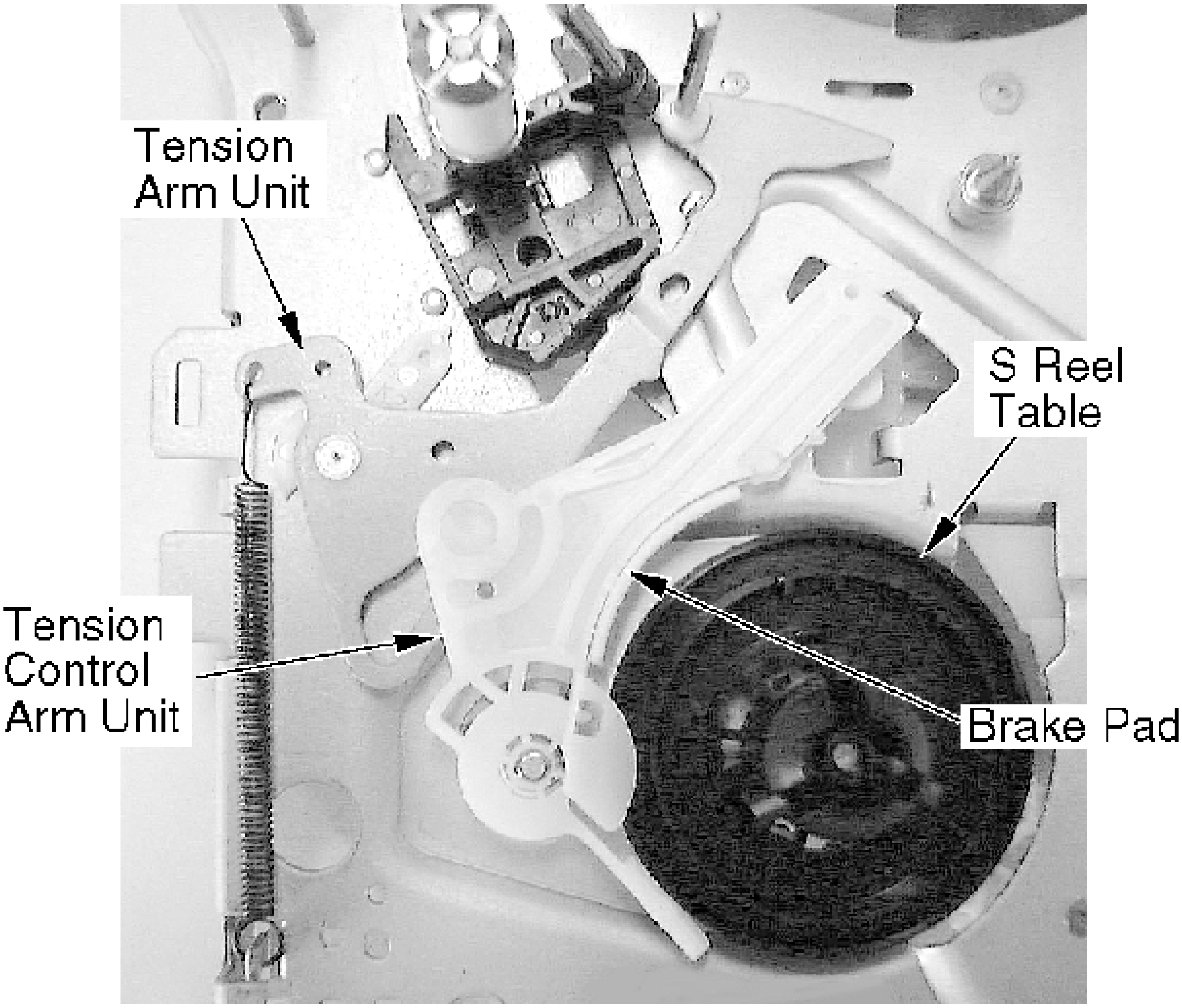
1. **Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.**
2. **Insert a Tension Meter into tape path and measure the back tension.**

Fig. M2-1



3. **If the reading is out of specification, make sure that there is no dust or foreign material between the Brake Pad of Tension Control Arm Unit and the S Reel Table.**
   After cleaning, the reading of tension measurement is still out of specification, replace the Tension Arm Unit and the Tension Control Arm Unit.

Fig. M2-2


Tension Arm Unit
S Reel Table
Tension Control Arm Unit
Brake Pad

Note:

A. Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.

B. It is recommended that measurements should be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.

7.2.2.2. MR HEAD GAP ADJUSTMENT

Purpose:

To properly pick up the FG Signal.

Symptom of Misadjustment:

If the FG Signal is not properly picked up, Servo Operation cannot be achieved.

Equipment Required:

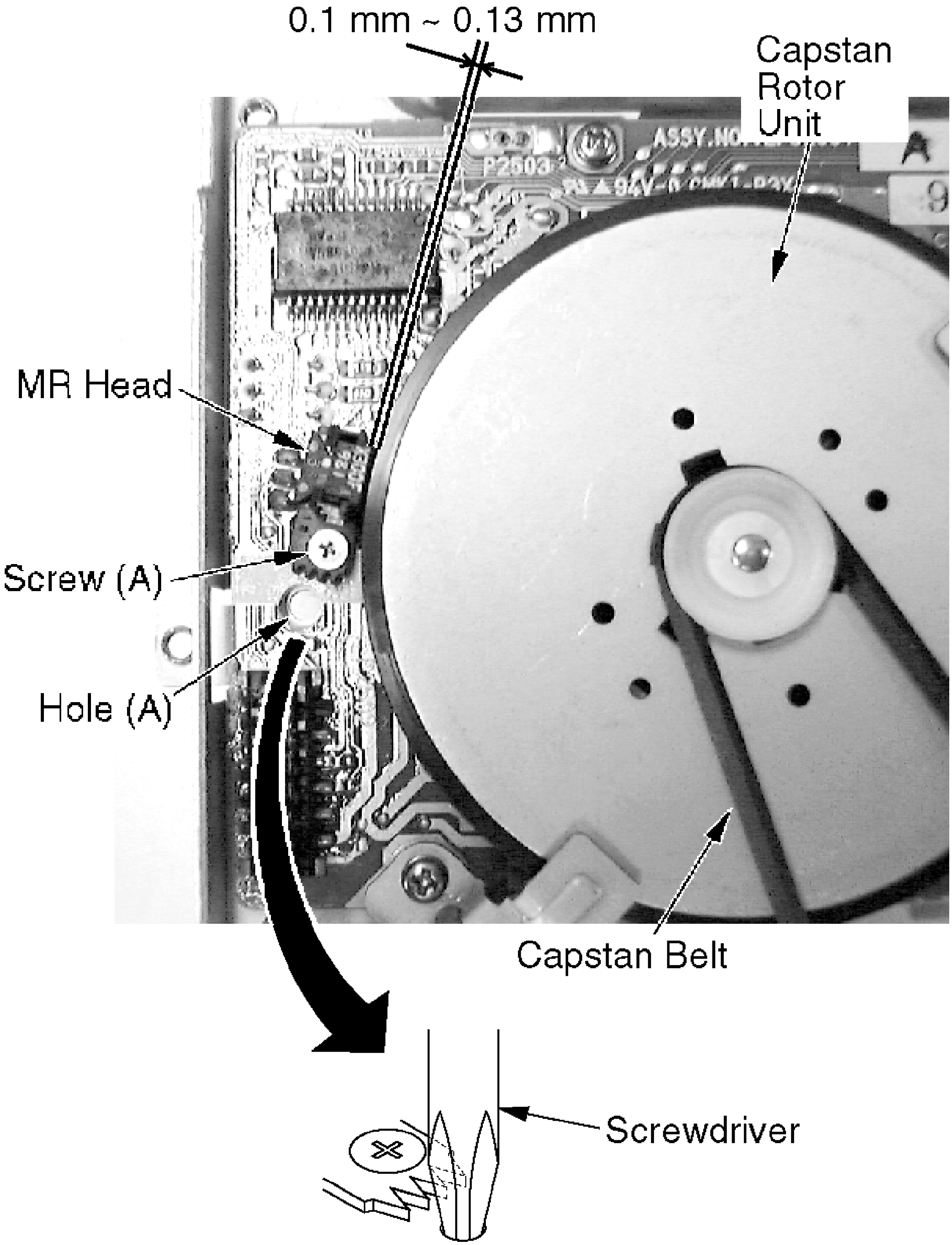
Oscilloscope

Specification:

0.1 mm ~ 0.13 mm

1. **Remove the VCR Chassis Unit and then place it upside down.**
2. **Remove the Main C.B.A.**
3. **Slightly loosen Screw (A). Then set the Screwdriver (Phillips Driver) into the Hole (A). Turn the screwdriver clockwise until the MR Head touches the rotor. Then turn it slightly counterclockwise to make the clearance as specified.**
4. **Tighten Screw (A).**
5. **Reinstall the Main C.B.A.**

Fig. M3-1


0.1 mm ~ 0.13 mm
Capstan Rotor Unit
MR Head
Screw (A)
Hole (A)
Capstan Belt
Screwdriver

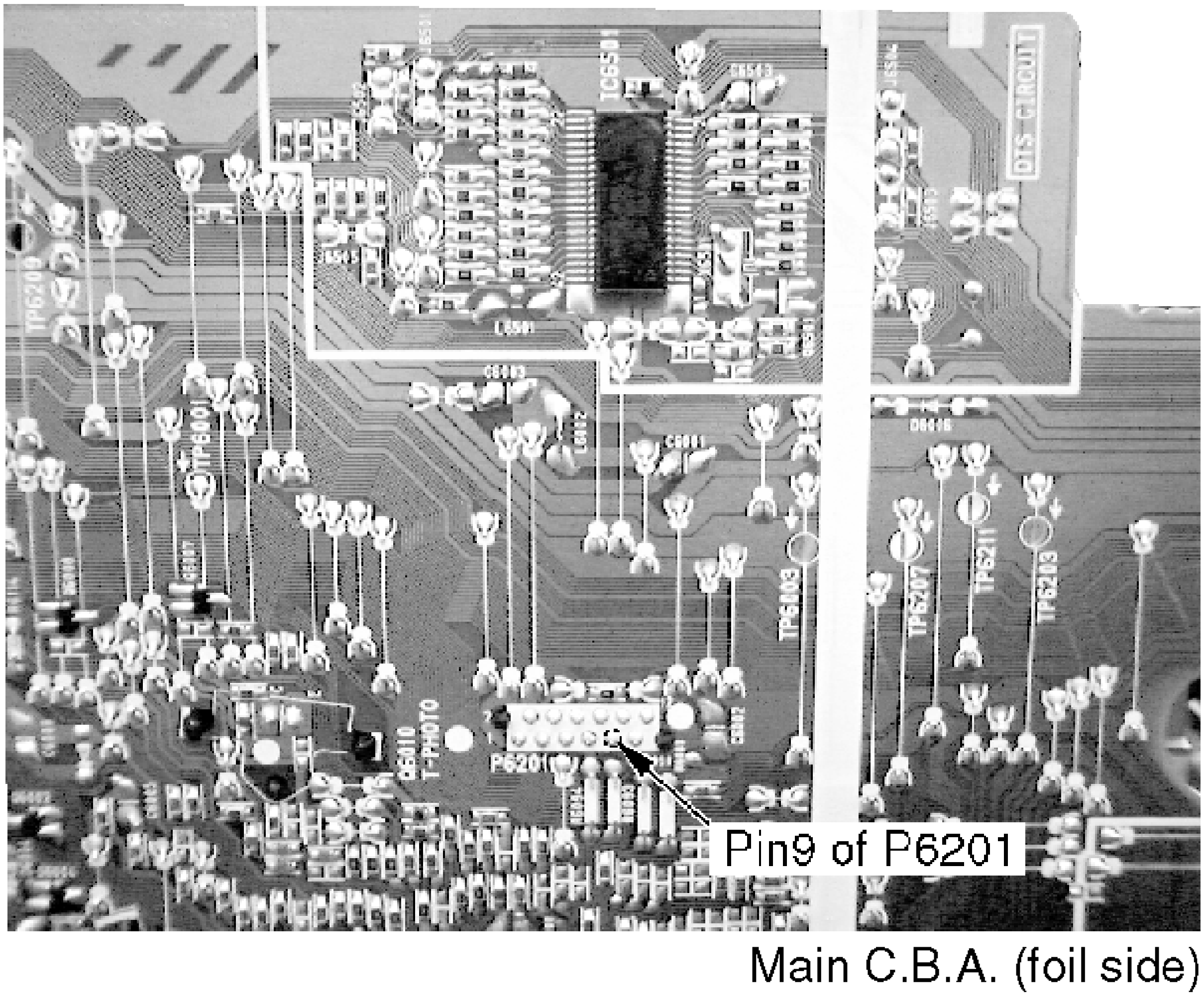
Note:

Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

Confirmation of Signal Level

1. **Place the unit in Service Position (2). Refer to "SERVICE POSITION" in SERVICE NOTES.**
2. **Supply a Video Signal to the video input jack.**
3. **Insert a cassette tape and place the unit in SLP recording mode.**
4. **Connect the oscilloscope to Pin 9 of P6201 on the Main C.B.A. Confirm that the signal level is greater than 20 mV [P-P].**

Fig. M3-2


IC6501
DTS CIRCUIT
TP6209
TP6001
TP6003
TP6207
TP6211
TP6203
T-PHOTO
P6201
Pin9 of P6201
Main C.B.A. (foil side)

7.2.2.3. TAPE INTERCHANGEABILITY ADJUSTMENT

Note:

To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

Equipment Required:

Dual Trace Oscilloscope
VHS Alignment Tape (VFMS0003H6)
Post Adjustment Driver (VFK0329)
H-Position Adjustment Driver (VFK0330)

7.2.2.3.1. ENVELOPE OUTPUT ADJUSTMENT

The height of the P2 and P3 Posts replacement part is preadjust at the factory.

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

Equipment Required:

Post Adjustment Driver (VFK0329)

1. **Place a jumper between TP6003 and +5V(TP6009) on the Main C.B.A. to defeat Auto Tracking.**
2. **Eject the tape and insert it again to access the Neutral Tracking position.**
3. **Play back the alignment tape.**
4. **Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.**
5. **Confirm that the RF envelope is flat enough (V1/V-max. is 0.7 or more). If not, with Post Adjustment Driver, adjust P2 and P3 post height so that the envelope waveform becomes as flat (V1/V-max. is 0.7 or more) as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.**

   CAUTION:

   Overtightening P2 and P3 posts may cause the threads to strip.

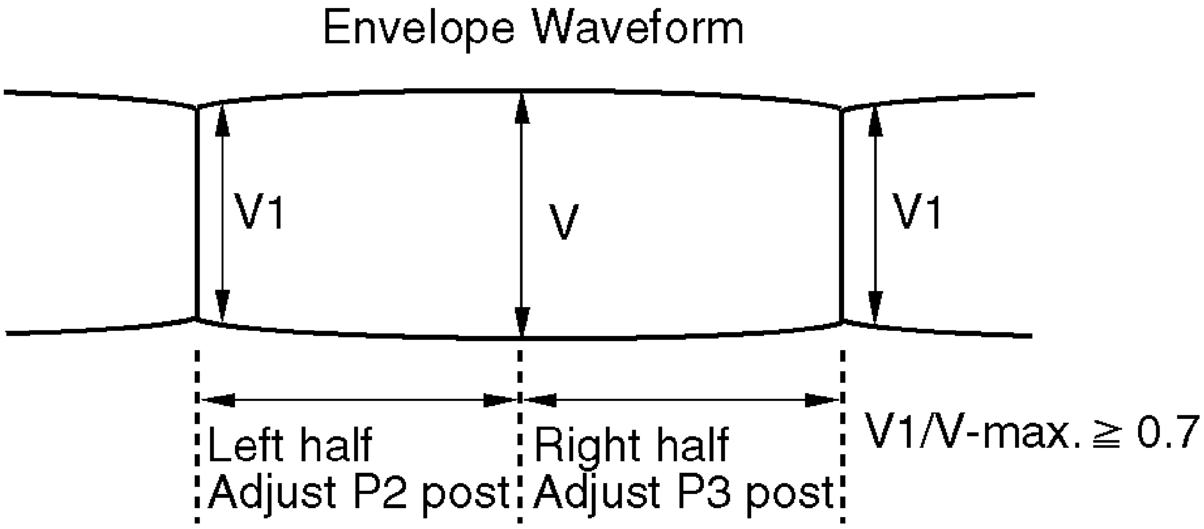
   Note:

   It will be possible to confirm Step 5 according to following steps.

   A. **Press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post**

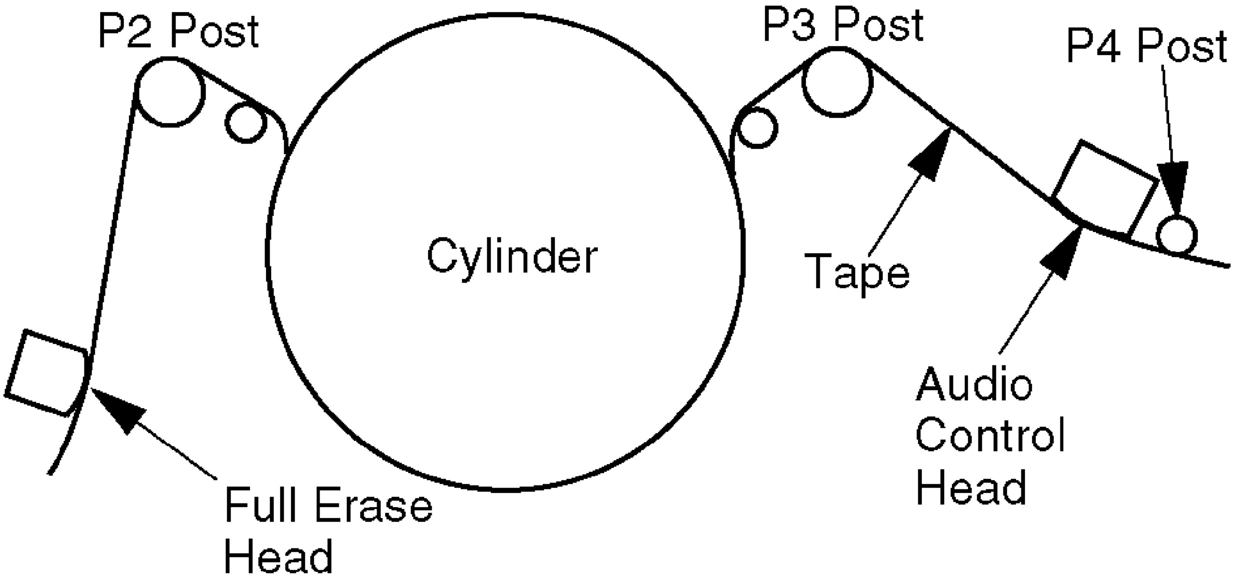
heights.

Fig. M4-1



Envelope Waveform
V1
V
V1
Left half
Adjust P2 post
Right half
Adjust P3 post
V1/V-max. ≧ 0.7

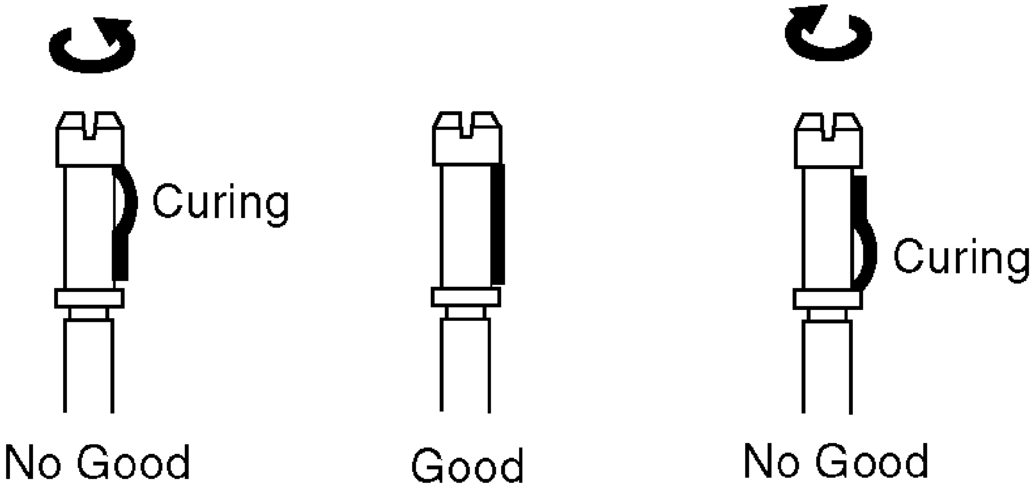
Fig. M4-2



P2 Post
P3 Post
P4 Post
Cylinder
Tape
Audio
Control
Head
Full Erase
Head

6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.

Fig. M4-3



7. Remove the jumper after completing the adjustment procedure.

7.2.2.3.2. AUDIO CONTROL HEAD TILT ADJUSTMENT

Purpose:

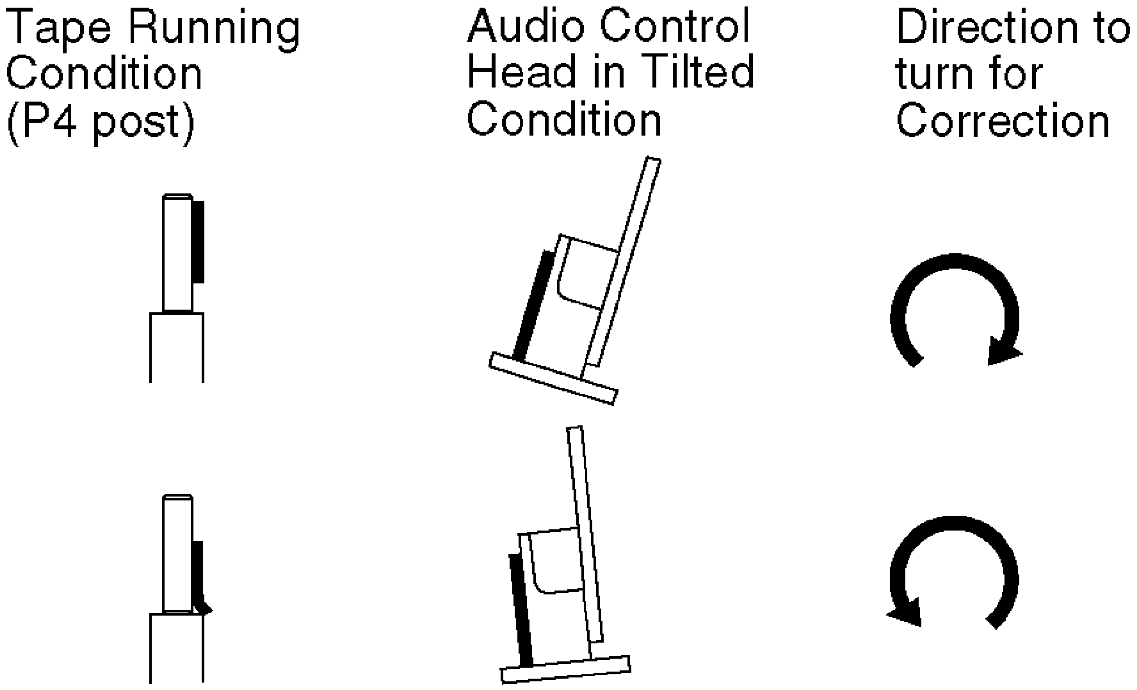
To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

Symptom of Misadjustment:

If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

Fig. M5


Tape Running Condition (P4 post)
Audio Control Head in Tilted Condition
Direction to turn for Correction

7.2.2.3.3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

Purpose:

To be sure the tape runs properly along the Control Head.

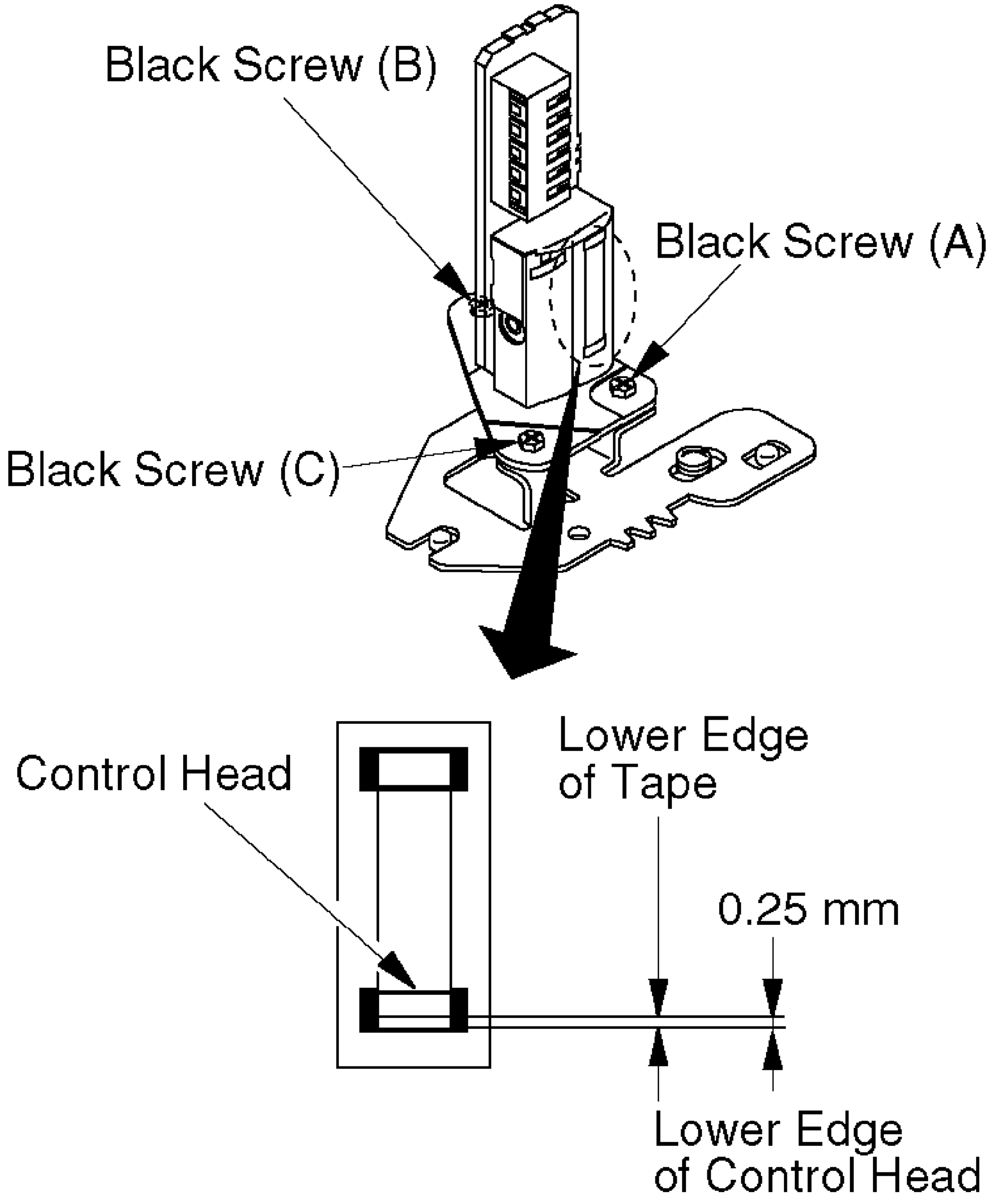
Symptom of Misadjustment:

If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. **Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.**
2. **If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.**

Fig. M6


Black Screw (B)
Black Screw (A)
Black Screw (C)
Control Head
Lower Edge
of Tape
0.25 mm
Lower Edge
of Control Head

7.2.2.3.4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

Purpose:

To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment:

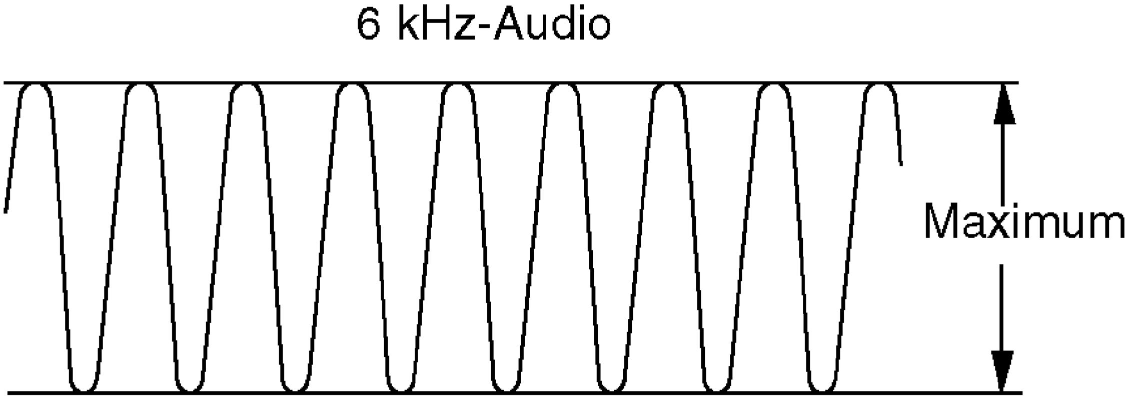
If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the TP4002 on the Main C.B.A.

2. Play back the 6 kHz Monaural Audio portion of the alignment tape.

3. Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.

Fig. M7



4. Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).

7.2.2.3.5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:

To adjust the Horizontal Position of the Audio Control Head.

Symptom of Misadjustment:

If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. Place a jumper between TP6003 and +5V(TP6009) on the Main C.B.A. to defeat Auto Tracking.

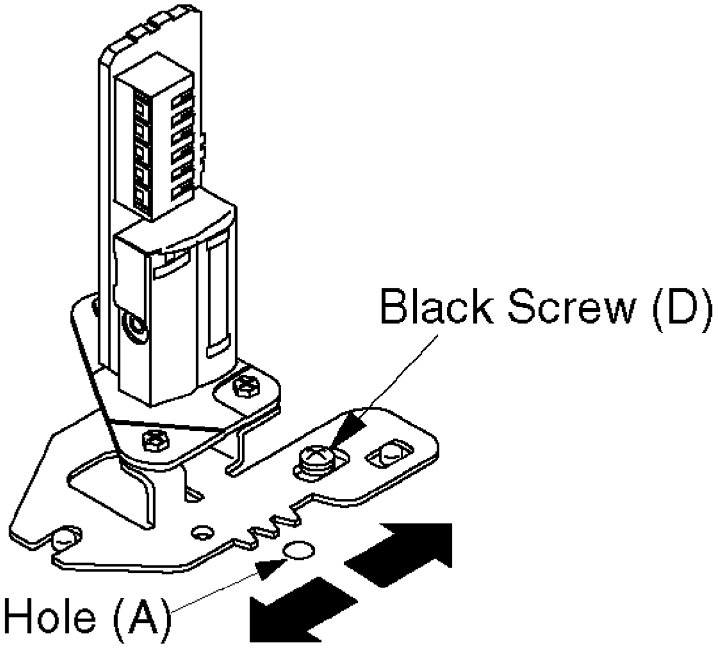
2. Eject the tape and insert it again to access the Neutral Tracking position.

3. Play back the alignment tape.

4. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.

5. Loosen the Black Screw (D) and tighten it slightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.

Fig. M8



6. Tighten Black Screw (D).

7. Remove the jumper between TP6003 and +5V(TP6009).

Note:

Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

7.3. ELECTRICAL ADJUSTMENT

NOTE:

Following Adjustments have been preadjusted at factory and are not required.

- Purity Adjustment
- Static Central Convergence Adjustment
- Dynamic Convergence Adjustment

7.3.1. TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

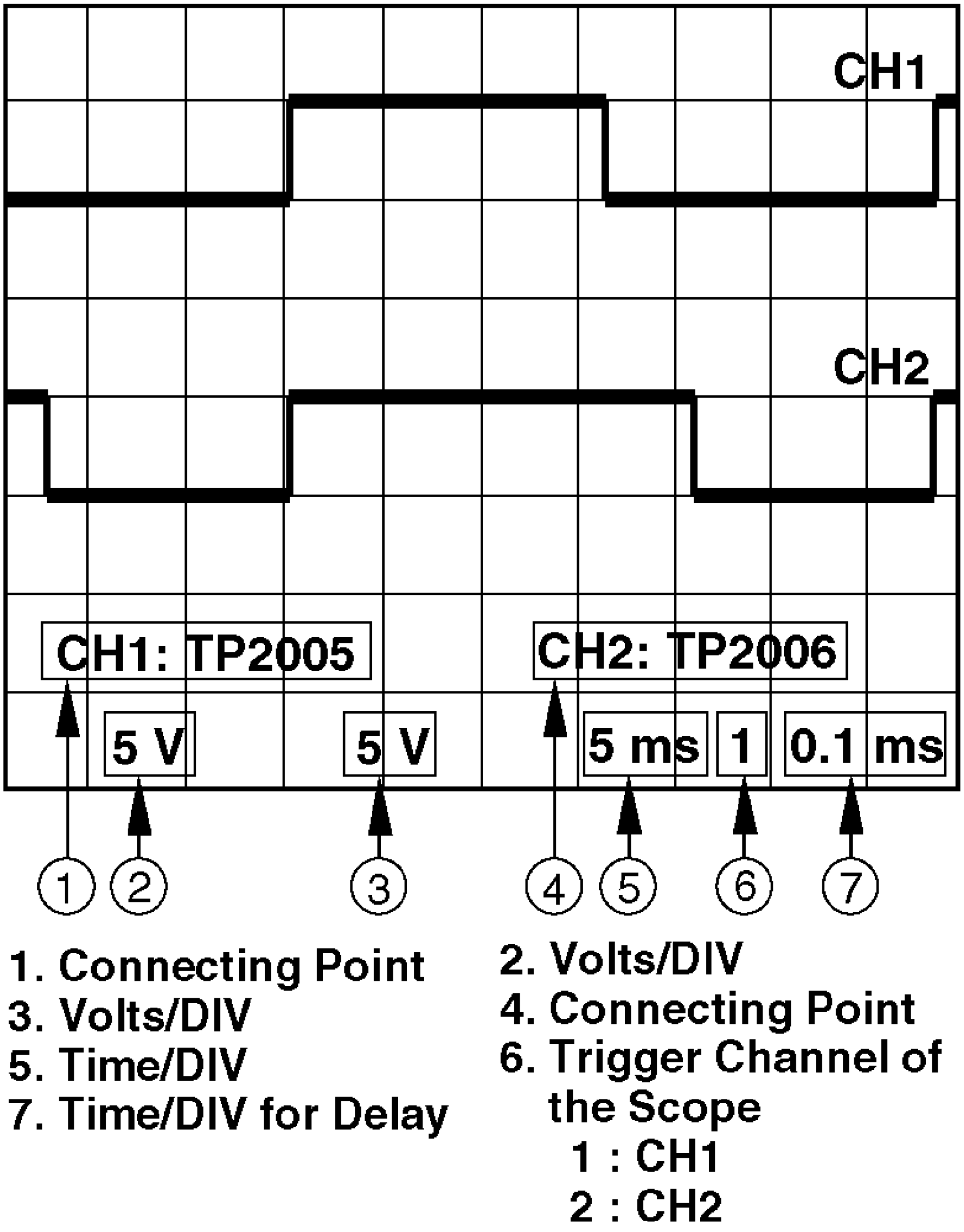
1. Dual-Trace Oscilloscope

Voltage Range: 0.001 V to 50 V/Div.
Frequency Range: DC to 50 MHz
Probes: 10:1, 1:1

2. **NTSC Video Pattern Generator**
3. **DVM (Digital Volt Meter)**
4. **MTS/SAP Signal Generator**
   (TV Multi-Channel Sound Modulator (U.S.A.))
5. **Frequency Counter**
   Frequency Range: 0 to 150 MHz
6. **Plastic Tip Driver and Non-Metal Driver**
7. **Isolation Transformer (Variable)**
8. **VHS Alignment Tape (VFMS0003H6)**
9. **Degaussing Coil**
10. **White Pattern Generator**
11. **Audio Generator**

7.3.2. HOW TO READ THE ADJUSTMENT PROCEDURES

Fig. E1


CH1
CH2
CH1: TP2005
CH2: TP2006
5 V
5 V
5 ms
1
0.1 ms
①
②
③
④
⑤
⑥
⑦
1. Connecting Point
3. Volts/DIV
5. Time/DIV
7. Time/DIV for Delay
2. Volts/DIV
4. Connecting Point
6. Trigger Channel of the Scope
1 : CH1
2 : CH2

7.3.3. STEREO/SAP SEPARATION ADJUSTMENT

Note:

Remove the DVD unit before performing this adjustment.

Purpose:

To separate the L and R Channels of Stereo Signal.

Symptom of Misadjustment:

The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

Test Point :

TP9001, TP9101 (Audio C.B.A.)

Adjustment:

R9001, R9008, R9101, R9108 (Audio C.B.A.)

Specification :

minimum level

INPUT :

Antenna Input Terminal
MTS (ONLY L CH)
300 Hz±5 Hz, 3 kHz±5 Hz
14 % or 7 % Modulating

Mode :

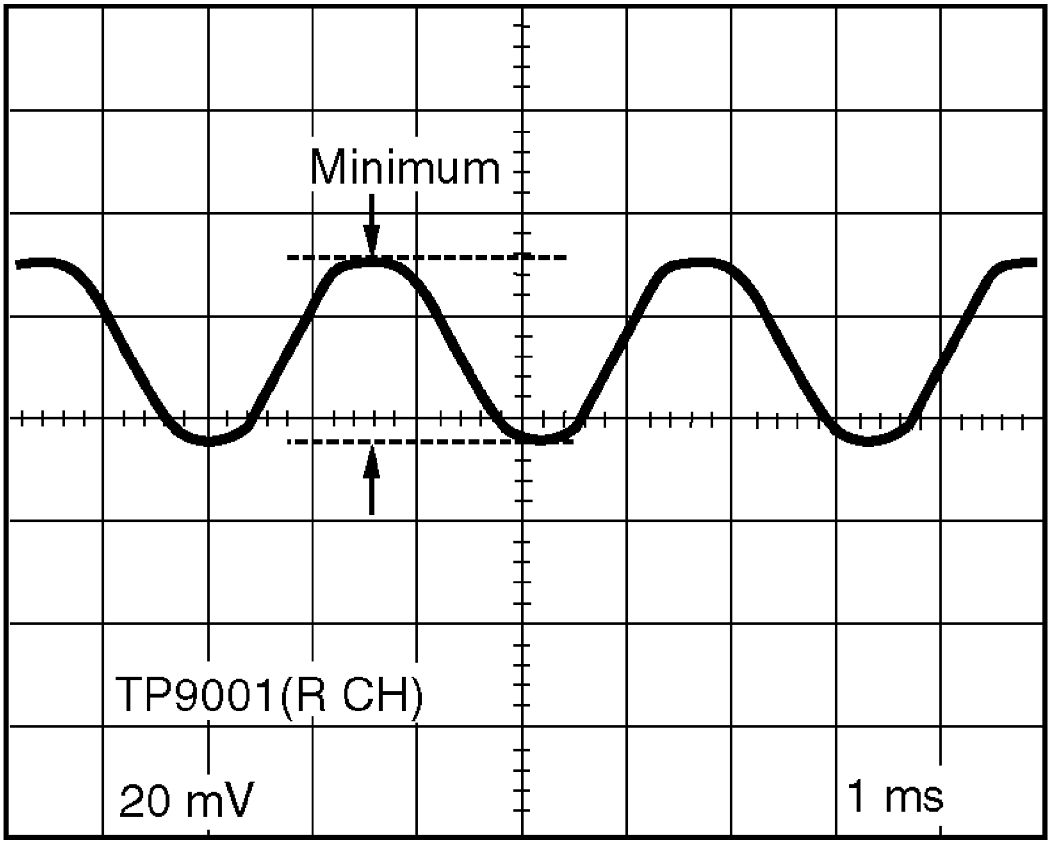
STEREO audio (TV)

Equipment :

Oscilloscope, MTS/SAP Signal Generator

1. **Set to TV mode, and then set to STEREO audio.**
2. **Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.**
   Then, set the MTS/SAP Signal Generator as follows.
   MTS (ONLY L CH)
   300 Hz±5 Hz
   14 % or 7 % Modulating
3. **Connect the Oscilloscope to TP9001 on the Audio C.B.A.**
4. **Adjust R9001 (SEP (L)) on the Audio C.B.A. so that the signal level of TP9001 is minimum.**
5. **Set the MTS/SAP Signal Generator as follows.**
   MTS (ONLY L CH)
   3 kHz±5 Hz
   14 % or 7 % Modulating
6. **Adjust R9008 (SEP (H)) on the Audio C.B.A. so that the signal level of TP9001 is minimum.**

Fig. E2-1



7. Set the MTS/SAP Signal Generator as follows.
   MTS (ONLY L CH)
   300 Hz±5 Hz
   14 % or 7 % Modulating

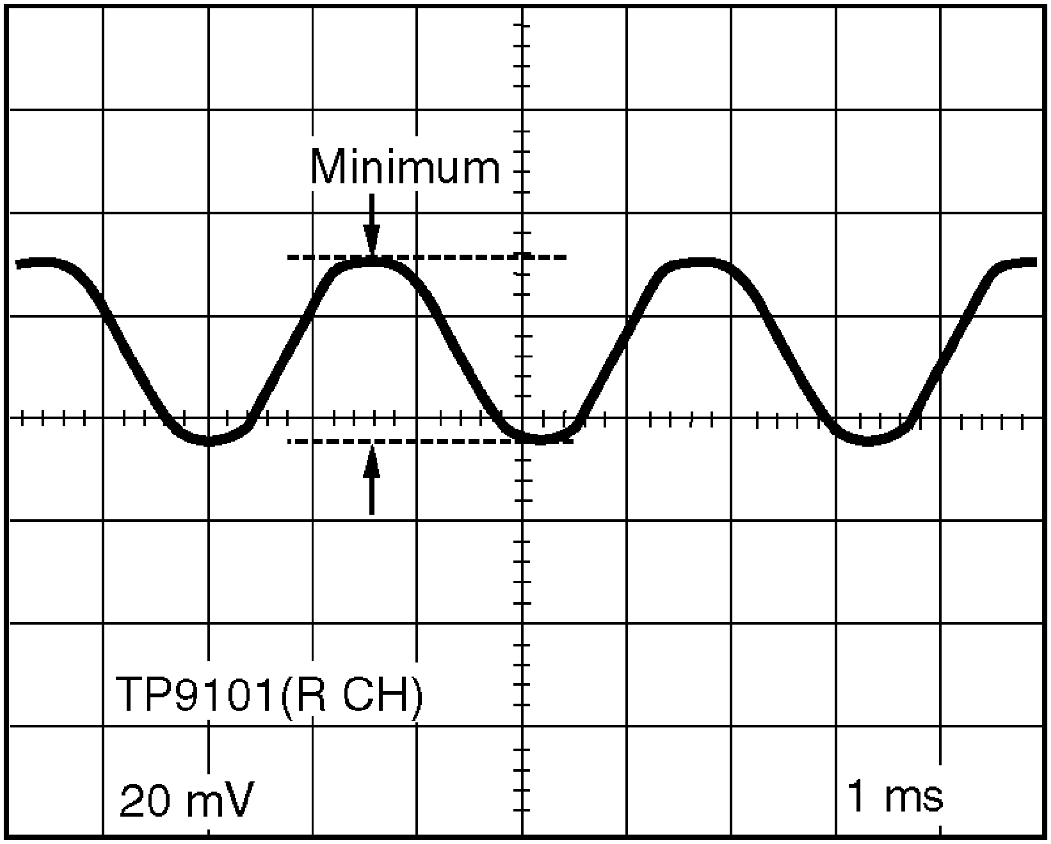
8. Connect the Oscilloscope to TP9101 on the Audio C.B.A.

9. Adjust R9101 (SEP (L)) on the Audio C.B.A. so that the signal level of TP9101 is minimum.

10. Set the MTS/SAP Signal Generator as follows.
    MTS (ONLY L CH)
    3 kHz±5 Hz
    14 % or 7 % Modulating

11. Adjust R9108 (SEP (H)) on the Audio C.B.A. so that the signal level of TP9101 is minimum.

Fig. E2-2



7.3.4. SEPARATION ADJUSTMENT

Note:

Be sure to perform this adjustment after STEREO/SAP SEPARATION ADJUSTMENT are completed.

Purpose:

To separate the L and R Channels of Stereo Signal.

Symptom of Misadjustment:

The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

Test Point :

TP9001, TP9101 (Audio C.B.A.)

Adjustment :

R9003, R9103 (Audio C.B.A.)

Specification :

minimum level

INPUT :

Antenna Input Terminal
MTS (ONLY L CH)
300 Hz±5 Hz
14 % or 7 % Modulating

Mode :

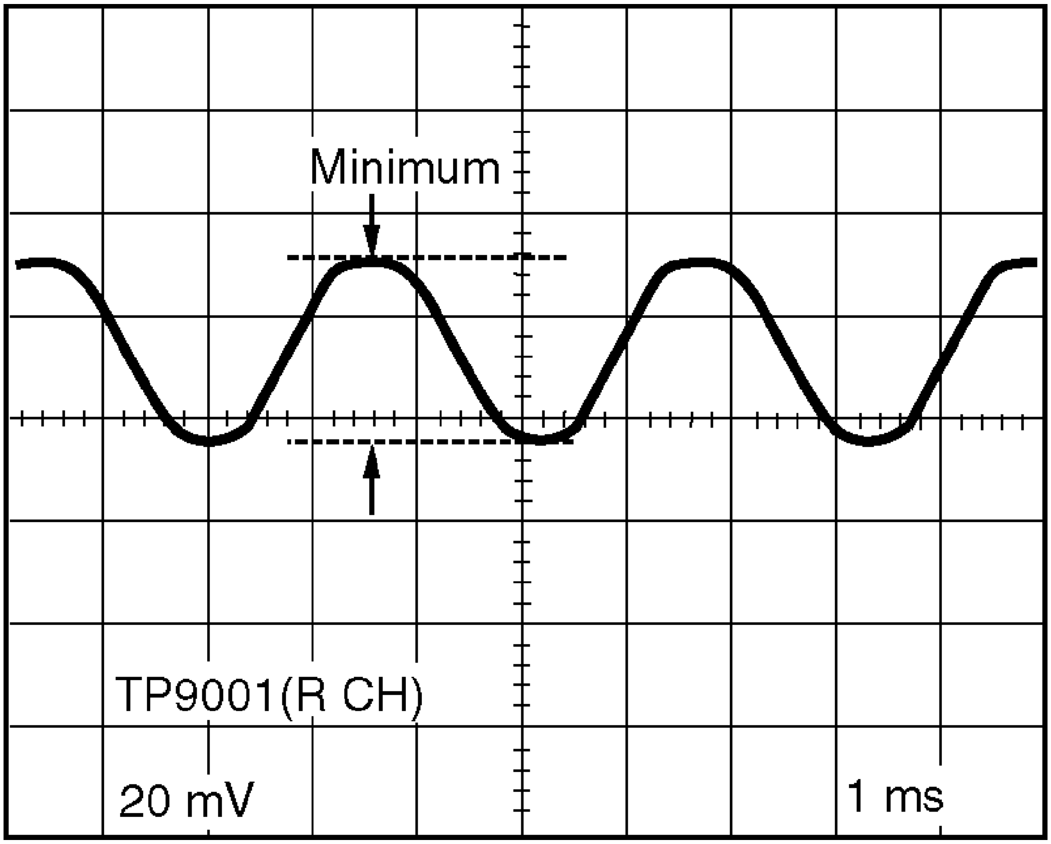
STEREO audio (TV)

Equipment :

Oscilloscope, MTS/SAP Signal Generator

1. **Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.**
2. **Connect the Oscilloscope to TP9001 on the Audio C.B.A.**
3. **Set to TV mode, and then set to STEREO audio.**
4. **Adjust R9003 on the Audio C.B.A. so that the signal level is minimum.**

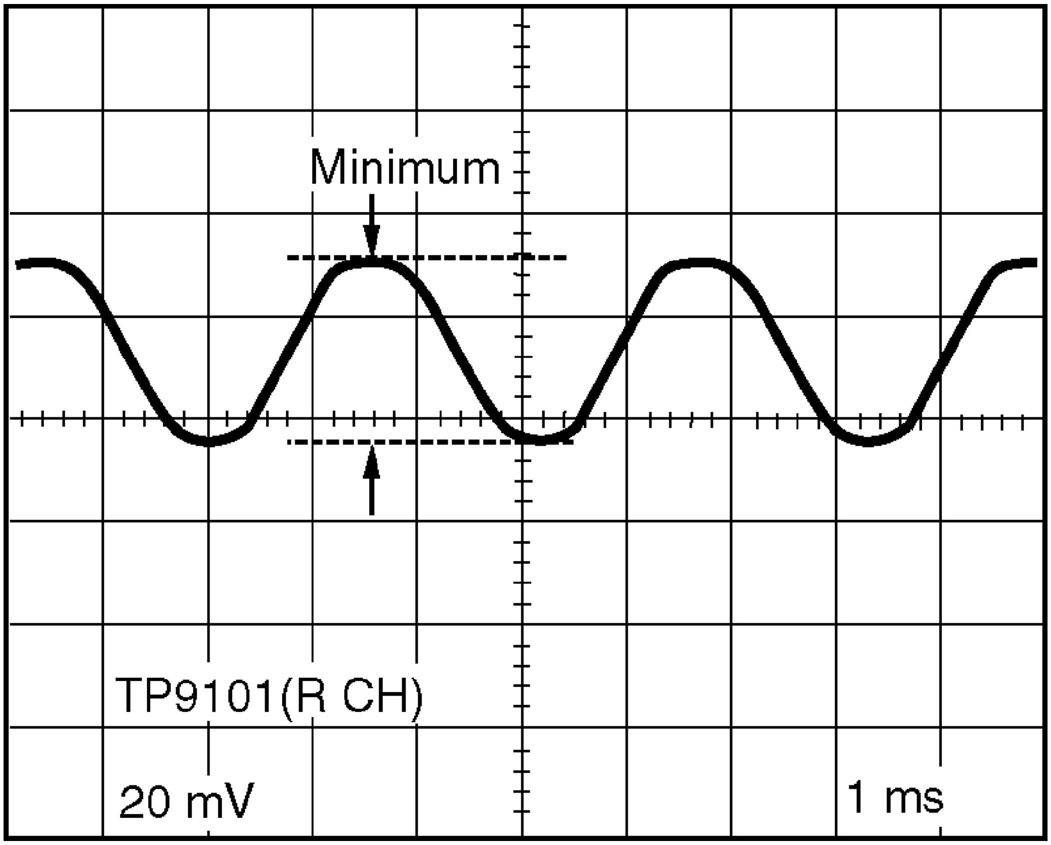
Fig. E3-1



5. **Connect the Oscilloscope to TP9101 on the Audio C.B.A.**

6. Adjust R9103 on the Audio C.B.A. so that the signal level is minimum.

Fig. E3-2



7.3.5. FM VCO ADJUSTMENT

Note:

Remove the DVD unit before performing this adjustment.

Purpose:

To set VCO free run frequency.

Symptom of Misadjustment:

Even when stereophony is received, only monaural sound will be output.

Test Point :

Pin 45 of P4206, TP9201 (Audio C.B.A.)

Adjustment :

R9206 (Audio C.B.A.)

Specification :

38.0 kHz±50 Hz

Input :

Mode :

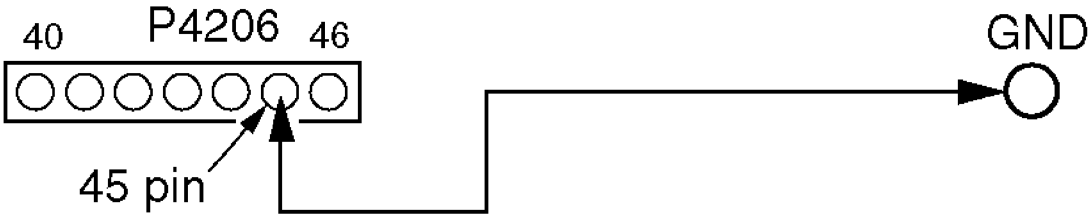
STEREO audio (FM Radio)

Equipment :

Frequency Counter

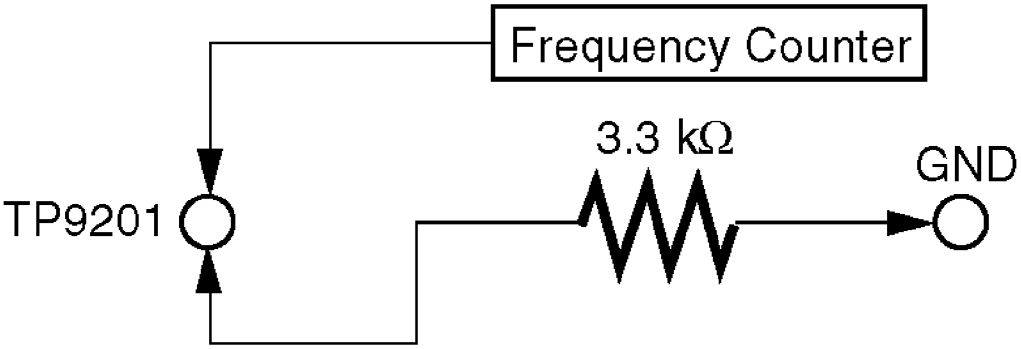
1. Connect Pin 45 of P4206 on Audio C.B.A. to GND.

Fig. E4-1


40
P4206
46
GND
45 pin

2. Connect TP9201 on Audio C.B.A. to GND through a resistor (3.3 kΩ). Then, connect Frequency Counter to TP9201.

Fig. E4-2


Frequency Counter
3.3 kΩ
GND
TP9201

3. Adjust R9206 (FM VCO) so that the frequency is 38.0 kHz±50 Hz.

7.3.6. DVD LUMINANCE ADJUSTMENT

Purpose :

To set the optimum luminance level for DVD.

Symptom of Misadjustment :

The picture is too bright or too dark.

Test Point :

TP8201 (DVD DECODER C.B.A.)

Adjustment :

R8299 (DVD DECODER C.B.A.)

Specification :

1.0 V[P-P]±0.05 V[P-P]

Input :

Mode :

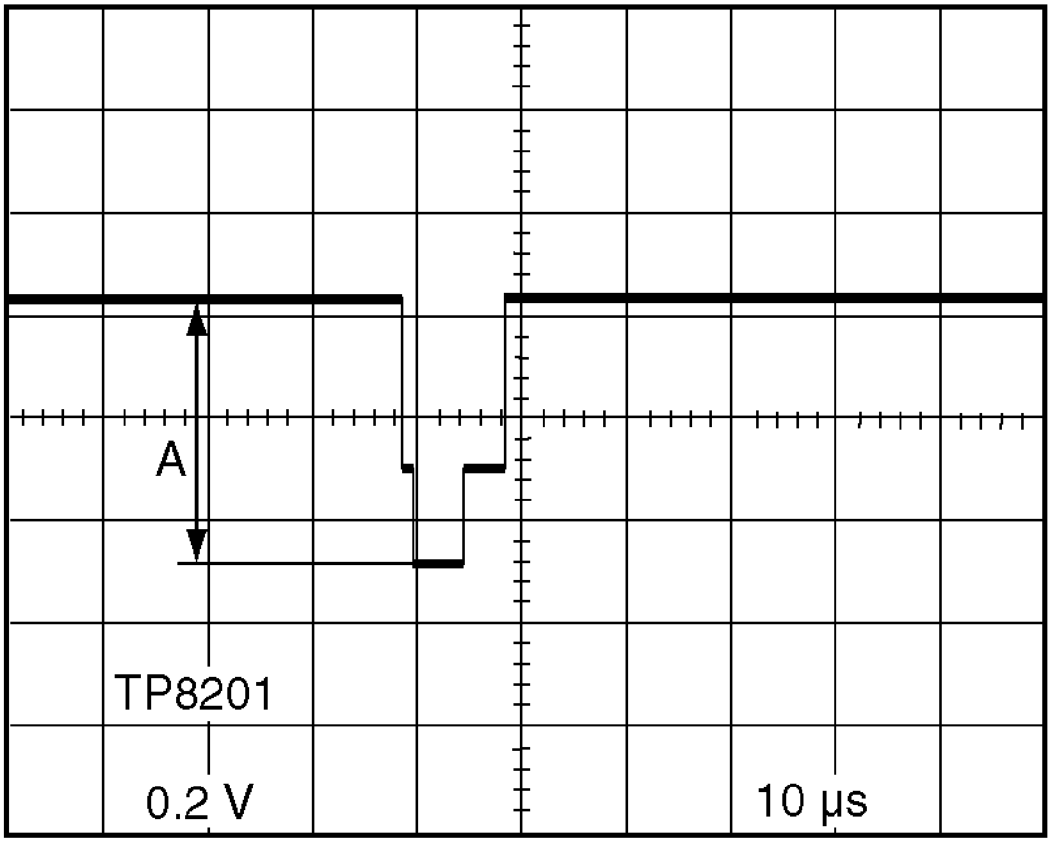
DVD PLAY

Equipment :

Oscilloscope, DVD Test Disc

1. **Playback 100% Flat Field on the DVD Test Disc in DVD PLAY Mode.**
2. **Connect the Oscilloscope to TP8201 and GND.**
3. **Adjust R8299 so that the level A becomes**
4. **1.0 V[P-P]±0.05 V[P-P].**

Fig. E5



7.3.7. EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL

This unit has electronic technology using I2C Bus concept.
The following control functions are adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).
Control functions which are indicated in EVR ADJUSTMENT MODE will be changed on running change basis.Control functions are inter changeable for early products and later products.

Note:

Write the original value to MEMO column before adjustment.

EARLY PRODUCTS

Do not change the value of data except Bold-faced letters.

Control functions	Range	Default	MEMO
SUB COLOR	C0-FF,00-3F	00	
VV COLOR	E0-FF,00-20	07	
LINE COLOR	E0-FF,00-20	00	
NML COLOR DIF	C0-FF,00-3F	00	
THT COLOR INI	00-3F	1D	
NT COLOR INI	00-3F	20	
SUB TINT	C0-FF,00-3F	05	
VV TINT	E0-FF,00-20	00	
LINE TINT	E0-FF,00-20	00	
NML TINT DIF	C0-FF,00-3F	00	
THT TINT INI	02-3E	20	
NT TINT INI	02-3E	20	
SUB BRIGHT	80-FF,00-7F	1F	
NML BRIGHT DIF	C0-FF,00-3F	00	
THT BRIGHT INI	00-3F	21	
NT BRIGHT INI	00-3F	16	
SUB CONTRAST	81-C0	E2	
NML CONT DIF	81-C0	00	
THT CONT INI	00-3F	11	
NT CONT INI	00-3F	19	
SUB SHARPNESS	C0-FF,00-3F	06	
VV SHARPNESS	E0-FF,00-20	00	
R CUT	000-3FC	0FD	
G CUT	001-0FF	07	
B CUT	000-3FC	0FD	
R DRV	00-7E,98-FE	7F	
B DRV	01-7F,97-FF	7F	
V HET	00-7F	48	
H PIN	00-3F	14	
H WID	00-3F	1F	
SW1	00-7F	28	
SW2	00-FD	00	
HROVLR	00-07	04	
BLACK GAIN	00-0F	0F	
WHITE r GAIN	00-0F	06	
WHITE r LEVEL	00-0F	0A	
BLACK SLOPE	00-07	08	
DECODE AXIS	00-1F	15	
DECODE GAIN	00-3F	1C	
C-Y RATE	00-03	01	
CHARA CORRECT	00-0F	05	
CHARA SLICE	00-0F	03	
H-POS	00-1F	0D	
V-SCR	00-3F	2F	
V-LIN	00-3F	21	
V-POS	00-3F	20	
H-KEY	00-3F	20	
H-BPN	00-0F	05	
H-TPN	00-0F	04	
V-EHT	00-0F	05	
H-EHT	00-0F	06	
TV SHP	80-FF,00-7D	0C	
LINE SHP	80-FF,00-7D	00	
PB SHP	80-FF,00-7D	C1	
NML SHARP DIF	C0-FF,00-3F	00	
THT SHARP INI	00-3F	1F	
NT SHARP INI	00-3F	20	
TV CLIP	00-FD	67	
LINE CLIP	00-FD	67	
PB CLIP	00-FD	67	
TV SSW	00,40	00	
LINE SSW	00,40	00	
PB SSW	00,40	40	
S SSW	00,40	40	
TV LIM	00-3F	10	
LINE LIM	00-3F	10	
PB LIM	00-3F	10	
TV COR	00-3F	0B	
LINE COR	00-3F	0B	
PB COR	00-3F	0C	
TV DLAY	00-7F	44	
LINE DLAY	00-7F	45	

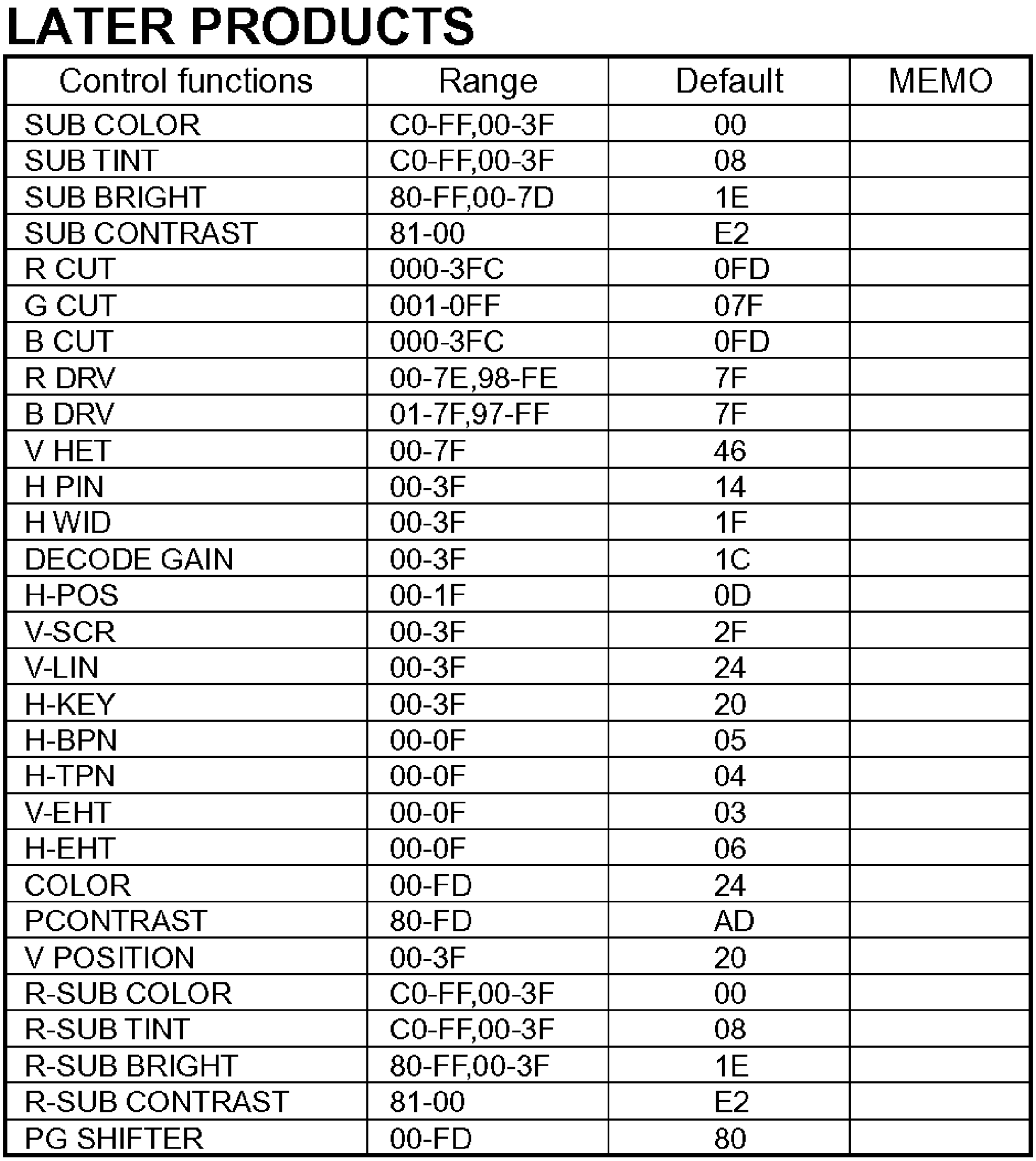
Control functions	Range	Default	MEMO
PB DLAY	00-7F	39	
S DL	00-7F	47	
TV VMLM	00-FD	92	
LINE VMLM	00-FD	94	
PB VMLM	00-FD	81	
TV VMCO	00-3F	13	
LINE VMCO	00-3F	13	
PB VMCO	00-3F	06	
ANR	00-FD	85	
PIC	00-FD	82	
NML BASS INI	00-0C	00	
MOV BASS INI	F4-FF,00-0C	03	
MSC BASS INI	F4-FF,00-0C	03	
SPC BASS INI	F4-FF,00-0C	[illegible]	
ACC BASS	00-0C	00	
VV BASS	00-0C	03	
NML TREBLE INI	00-0C	00	
MOV TREBLE INI	F4-FF,00-0C	00	
MSC TREBLE INI	F4-FF,00-0C	03	
SPC TREBLE INI	F4-FF,00-0C	FC	
ACC TREBLE	00-0C	01	
SUR EFFECT	00-0F	08	
TREBLE TUN	00-01	00	
NA VXA	00-FD	96	
NB VXA	00-FD	17	
NC VXA	00-FD	17	
ND VXA	00-FD	95	
SA VXA	00-FD	A6	
SB VXA	00-FD	17	
SC VXA	00-FD	17	
SD VXA	00-FD	A8	
NA HXA	00-FD	63	
NB HXA	00-FD	63	
NC HXA	00-FD	06	
ND HXA	00-FD	06	
SA HXA	00-FD	72	
SB HXA	00-FD	72	
SC HXA	00-FD	06	
SD HXA	00-FD	06	
COLOR	00-FD	21	
VCOLOR	00-FD	00	
TINT	00-FD	2B	
PCONTRAST	80-FD	AD	
VCONTRAST	80-FD	88	
BHM	00-FD	22	
DG START	00-3F	00	
YD	00-0F	04	
ADL	00-0F	05	
Y-OFFSET	80-8F	81	
DGY	40-4F	44	
SYNC DELAY	00-05	00	
[illegible]	00-FD	1A	
L-LEVEL	00-FD	1A	
MVC	00-05	00	
V POSITION	00-3F	20	
DVD COLOR	E0-FF,00-20	00	
DVD TINT	E0-FF,00-20	00	
DVD SHP	80-FF,00-7D	03	
DVD CLIP	00-FD	67	
DVD SSW	00,40	40	
DVD LIM	00-3F	10	
DVD COR	00-3F	0B	
DVD DLAY	00-7F	46	
DVD VMLM	00-FD	92	
DVD VMCO	00-3F	13	
R-SUB COLOR	C0-FF,00-3F	00	
R-SUB TINT	C0-FF,00-3F	08	
R-SUB BRIGHT	80-FF,00-3F	1E	
R-SUB CONTRAST	81-C0	E2	
EMANT	00-01	01	
S VMCO	00-3F	13	
BLUE BRIGHT	C0-FF,00	00	
BLUE CONTRAST	C0-FF,00	00	
TNR TREBLE	00-0C	03	
PG SHIFTER	00-FD	80	

Bold faced letters ► Control functions which need to be adjusted.

Only control functions (29 items) which are needed to adjust in field service are indicated by On Screen Displays.

Note:

Write the original value to MEMO column before adjustment.



LATER PRODUCTS

Control functions	Range	Default	MEMO
SUB COLOR	C0-FF,00-3F	00	
SUB TINT	C0-FF,00-3F	08	
SUB BRIGHT	80-FF,00-7D	1E	
SUB CONTRAST	81-00	E2	
R CUT	000-3FC	0FD	
G CUT	001-0FF	07F	
B CUT	000-3FC	0FD	
R DRV	00-7E,98-FE	7F	
B DRV	01-7F,97-FF	7F	
V HET	00-7F	46	
H PIN	00-3F	14	
H WID	00-3F	1F	
DECODE GAIN	00-3F	1C	
H-POS	00-1F	0D	
V-SCR	00-3F	2F	
V-LIN	00-3F	24	
H-KEY	00-3F	20	
H-BPN	00-0F	05	
H-TPN	00-0F	04	
V-EHT	00-0F	03	
H-EHT	00-0F	06	
COLOR	00-FD	24	
PCONTRAST	80-FD	AD	
V POSITION	00-3F	20	
R-SUB COLOR	C0-FF,00-3F	00	
R-SUB TINT	C0-FF,00-3F	08	
R-SUB BRIGHT	80-FF,00-3F	1E	
R-SUB CONTRAST	81-00	E2	
PG SHIFTER	00-FD	80	

7.3.8. EVR ADJUSTMENT ITEM

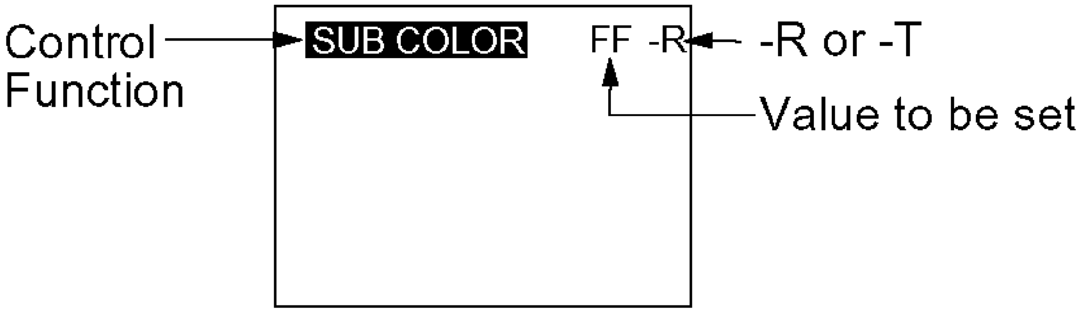
The following Items need to be adjusted for EVR adjustment.

- PG SHIFTER ADJUSTMENT
- SUB CONTRAST ADJUSTMENT
- CUT OFF, DRIVE ADJUSTMENT
- COLOR DECODE ADJUSTMENT
- TINT COLOR ADJUSTMENT
- SCAN SIZE CORRECTION ADJUSTMENT
- DEFLECTION DISTORTION CORRECTION ADJUSTMENT
- WHITE BALANCE ADJUSTMENT
- SUB BRIGHTNESS ADJUSTMENT
- PINP CHROMINANCE LEVEL ADJUSTMENT
- PINP LUMINANCE LEVEL ADJUSTMENT

7.3.9. HOW TO ENTER EVR ADJUSTMENT MODE

Press and hold STOP/EJECT, PLAY/REPEAT and VOL- buttons of VCR operation panel on the unit together over 5 seconds with no cassette inserted.
The adjustment overlay will appear to Enter EVR adjustment mode.

Fig. E6-1


Control Function
SUB COLOR
FF -R
-R or -T
Value to be set

Note:

This model has two Tuners.
Default values for -R and -T are same value.

-R: UHF/VHF TUNER /TV DEMODULATOR 1 UNIT

-T: UHF/VHF TUNER /TV DEMODULATOR 2 UNIT

7.3.9.1. How to adjust:

1. Press UP/DOWN ↑ ↓ key on the remote control to select control function to be adjusted.

Important Note:

Make a note of the original value of the controls before modifying in case the wrong control is adjusted.

2. Press RIGHT/LEFT ← → key on the remote control so that the shaded area moves to the value.

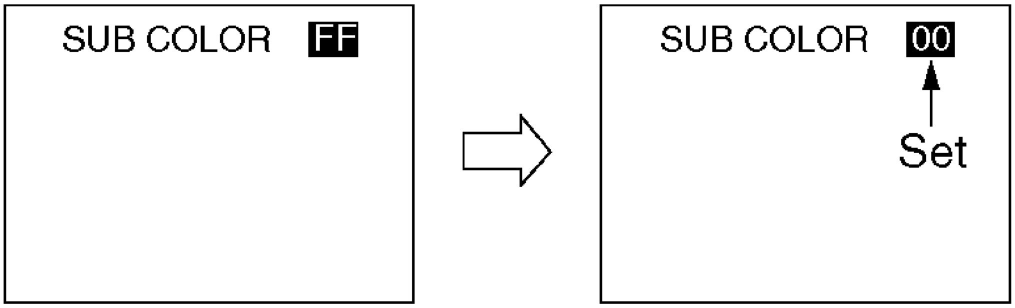


Fig. E6-2

3. Press UP/DOWN ↑ ↓ key on the remote control to adjust the value of the selected control.

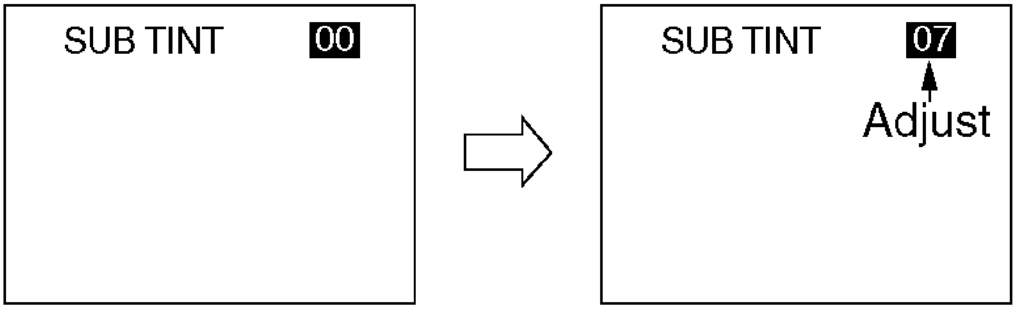

SUB TINT 00
SUB TINT 07
Adjust

Fig. E6-3

Note:

You can select a desired channel by using the numbered keys on the remote control in EVR adjustment mode.

4. Press RIGHT/LEFT ← → key on the remote control so that the shaded area moves to the control function.

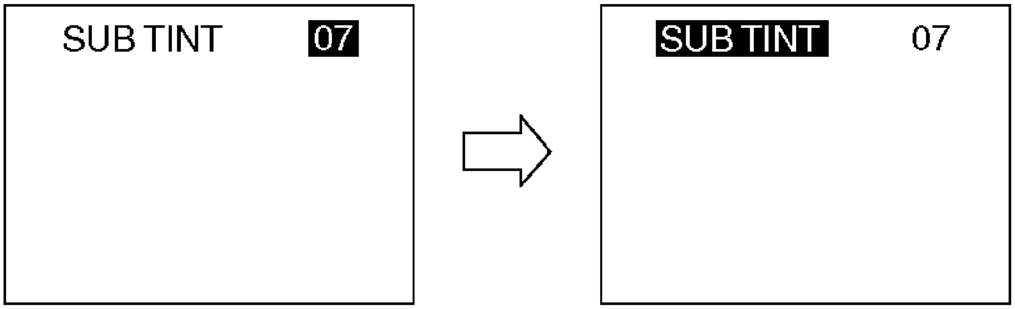

SUB TINT 07
SUB TINT 07

Fig. E6-4

5. Press UP/DOWN ↑ ↓ key on the remote control to select a control function for the next adjustment if necessary.

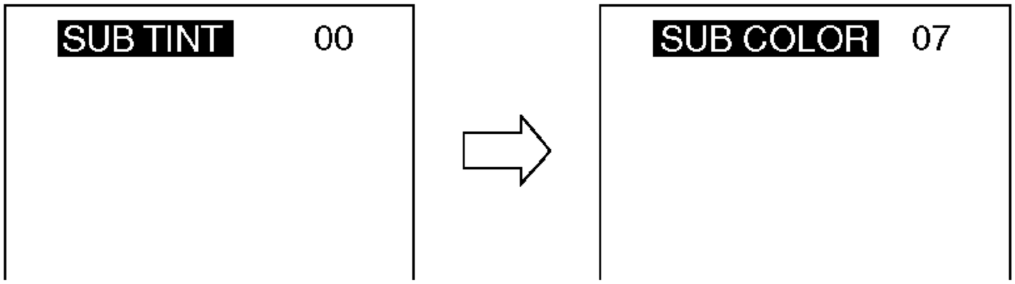

SUB TINT 00
SUB COLOR 07

Fig. E6-5

7.3.9.2. How to release from EVR Adjustment Mode:

Press and holds TOP/EJECT, PLAY/REPEAT and VOL- buttons of VCR operation panel on the unit together over 5 seconds again or press the POWER button OFF to release EVR adjustment mode. The adjusted value will be written to Memory IC (IC6004).

7.3.10. HOW TO ENTER SERVICE MODE

1. Set the unit to TV/VCR Mode.

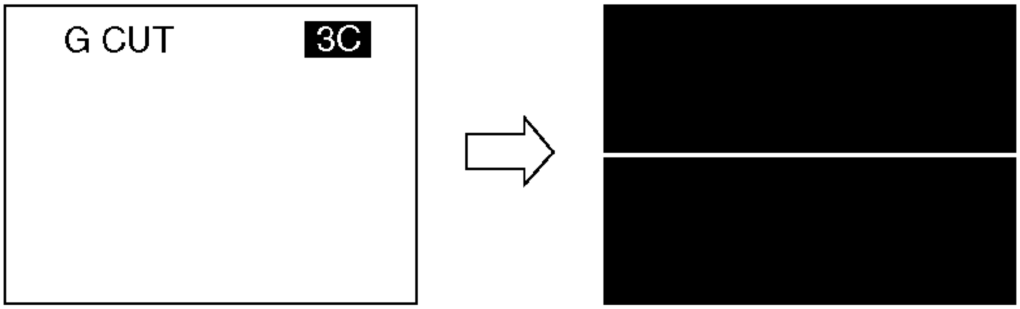
2. Enter EVR adjustment mode.

3. Press DISPLAY key on the remote control for collapse scan.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value for adjustments you will proceed.

Fig. E6-6



7.3.10.1. How to release from Service Mode:

Press DISPLAY key again on the remote control.

7.3.11. PG SHIFTER ADJUSTMENT

Purpose:

Determine the Video Head Switching Point during Playback.

Symptom of Misadjustment:

May cause Head Switching Noise and/or Vertical Jitter.

Test Point :

TP3001 (Main C.B.A.),

TP6205 (Main C.B.A.)

Adjustment :

PG SHIFTER (EVR)

Specification :

T = 6 H±1 H (0.38 ms±0.06 ms)

Input :

Mode :

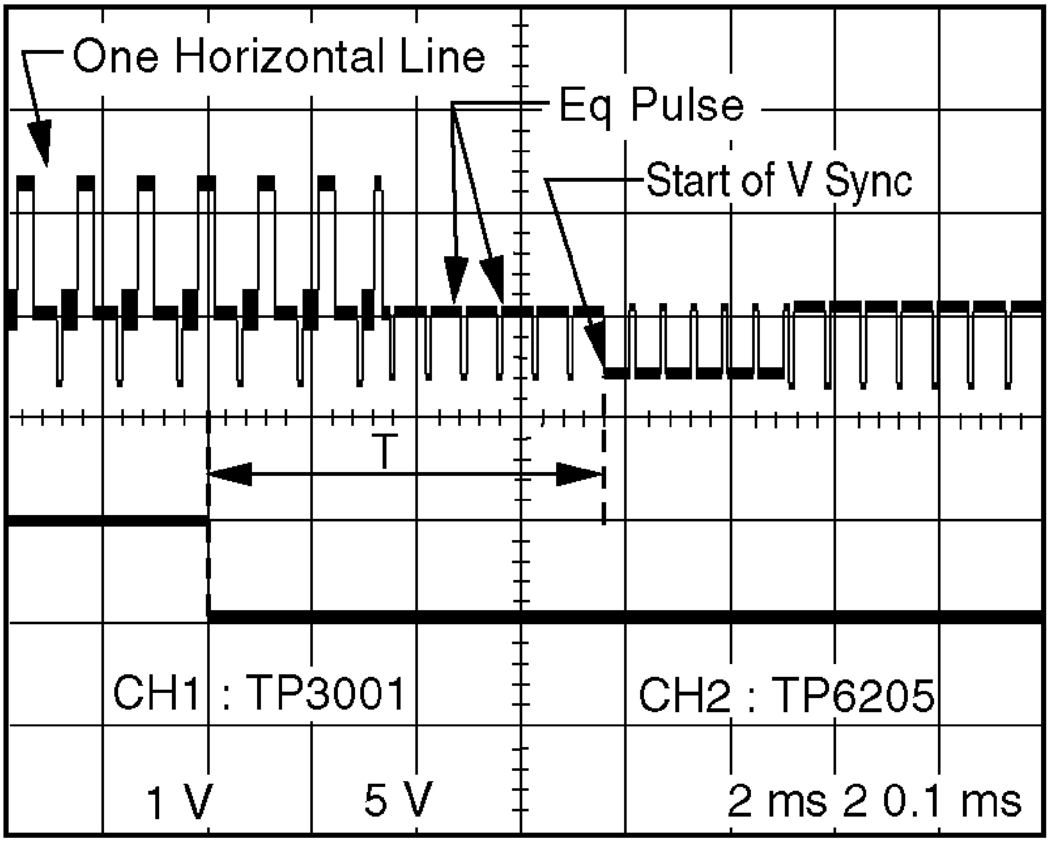
SP Playback

Equipment :

Oscilloscope,
VHS Alignment Tape (VFMS0003H6)

1. **Insert the VHS Alignment Tape and playback in SP mode.**
2. **Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Used TP6205 as a trigger.**
3. **Select PG SHIFTER in EVR adjustment mode and adjust value so that the trailing edge of the head switching pulse is placed 6 H±1 H (0.38 ms±0.06 ms) before the start of the vertical sync pulse.**

Fig. E7



7.3.12. SUB CONTRAST ADJUSTMENT

Purpose:

To set the optimum sub contrast level.

Symptom of Misadjustment:

The picture is too dark or too light.

Test Point :

TP48 (CRT C.B.A.)

Adjustment :

SUB CONTRAST (EVR),
R-SUB CONTRAST (EVR)

Specification :

2.4 V[p-p]±0.1 V[p-p]

Input :

Antenna Input Terminal,

Crosshatch Pattern Signal 1 V[p-p] (75 Ω terminated)

Mode :
STOP

Equipment :
Oscilloscope,
NTSC Video Pattern Generator

1. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input.
("-T" is displayed on the screen.)

2. Supply a Crosshatch Pattern Signal to the Antenna Input Terminal.

3. Connect the Oscilloscope to TP48 on the CRT C.B.A.

4. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the (D0).

5. Select SUB CONTRAST in EVR adjustment mode and adjust so that the level A is 2.4 V[p-p]±0.1 V[p-p].

6. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

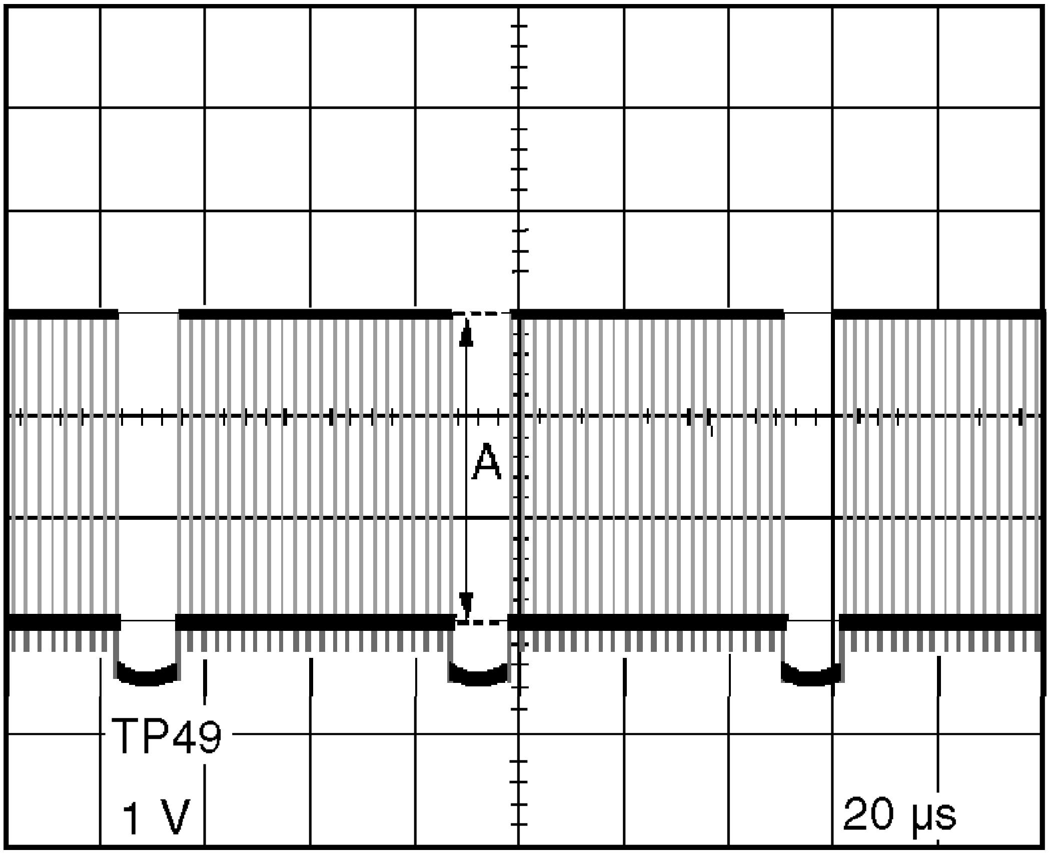
7. Set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 1 UNIT input. ("-R" is displayed on the screen.)

8. Select R-SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the (D0).

9. Select R-SUB CONTRAST in EVR adjustment mode and adjust so that the level A is 2.4 V[p-p]±0.1 V[p-p].

10. Select R-SUB BRIGHT in EVR adjustment mode and reset to the original value.

Fig. E8



7.3.13. SCREEN, CUT OFF, DRIVE ADJUSTMENT

Purpose:

To set the optimum Screen.

Symptom of Misadjustment:

The picture is will be an improper screen color mix.

Test Point :

TP50 (CRT C.B.A.)

Adjustment :

FOCUS CONTROL (F1)
(Flyback Transformer),
FOCUS CONTROL (F2)
(Flyback Transformer),
SCREEN CONTROL (Flyback Transformer),
SUB BRIGHT (EVR),
R-SUB BRIGHT (EVR),
B DRV (EVR),

R DRV (EVR),
B CUT (EVR),
G CUT (EVR),
R CUT (EVR)

Specification :

Refer to descriptions below.

Input :

Antenna Input Terminal,
Monoscope Pattern Signal

Mode :

STOP

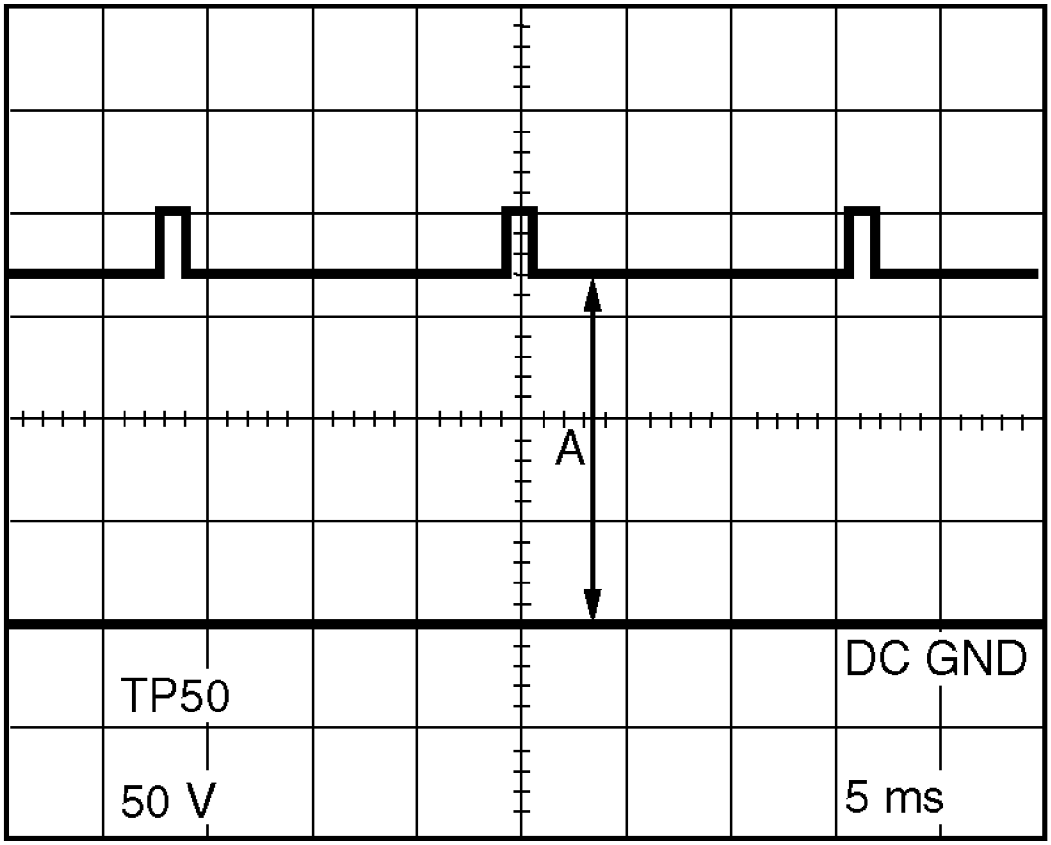
Equipment :

Oscilloscope,
NTSC Video Pattern Generator

1. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input.
   ("-T" is displayed on the screen.)
2. Supply a Monoscope Pattern Signal to the Antenna Input Terminal.
3. Connect the Oscilloscope to TP50 on the CRT C.B.A.
   (Use TP47 for GND.)
4. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
5. Adjust the FOCUS CONTROL (F1) on the Flyback Transformer so that the vertical line is the sharpest.
   Then, adjust FOCUS CONTROL (F2) on the Flyback Transformer so that the horizontal line is the sharpest.
6. Select SW1, R CUT and B CUT in EVR adjustment mode.
   Then after making a note of the original value and adjust as follows.
   SW1= "00"
   R CUT= "050"
   B CUT= "050"
7. Turn the SCREEN CONTROL on the Flyback Transformer fully counterclockwise.
8. Select SUB BRIGHT and move the shaded area to the data in EVR adjustment mode.
9. Press DISPLAY key on the remote control for collapse scan. (Refer to HOW TO ENTER SERVICE MODE.)

10. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is 175 VDC±5 VDC.

Fig. E9



11. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where green is first observed.
12. In EVR adjustment mode, select the two colors the following control functions (B CUT, R CUT) and adjust so that the horizontal line becomes white. (See NOTE)
13. Press DISPLAY key on the remote control again to return for full frame scan.
14. Select SUB BRIGHT in EVR adjustment mode and adjust so that the picture has adequate brightness.
15. Select R DRV and B DRV in EVR adjustment mode and adjust so that the entire screen is white.
16. Set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 1 UNIT input. ("-R" is displayed on the screen.)
17. Select R-SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.

18. Select SW1, R CUT and B CUT in EVR adjustment mode.
Then after making a note of the original value and adjust as follows.
SW1= "00"
R CUT= "050"
B CUT= "050"

19. Turn the SCREEN CONTROL on the Flyback Transformer fully counterclockwise.

20. Select SUB BRIGHT and move the shaded area to the data in EVR adjustment mode.

21. Press DISPLAY key on the remote control for collapse scan. (Refer to HOW TO ENTER SERVICE MODE.)

22. Adjust R-SUB BRIGHT in EVR adjustment mode so that the level A is 175 VDC±5 VDC.

23. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where green is first observed.

24. In EVR adjustment mode, select the two colors the following control functions (B CUT, R CUT) and adjust so that the horizontal line becomes white. (See NOTE)

25. Press DISPLAY key on the remote control again to return for full frame scan.

26. Select R-SUB BRIGHT in EVR adjustment mode and adjust so that the picture has adequate brightness.

27. Select R DRV and B DRV in EVR adjustment mode and adjust so that the entire screen is white.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

7.3.14. SUB COLOR/SUB TINT ADJUSTMENT

Purpose :

To set the standard color phase.

Symptom of Misadjustment :

Color phase will be shifted.

Test Point :

TP46, TP49, TP48 (CRT C.B.A.)

Adjustment :

SUB COLOR (EVR),

SUB TINT (EVR),
DECODE GAIN (EVR),
R-SUB COLOR (EVR),
R-SUB TINT (EVR)

Specification :
Refer to descriptions below.

Input :
Antenna Input Terminal,
Rainbow Color Bar

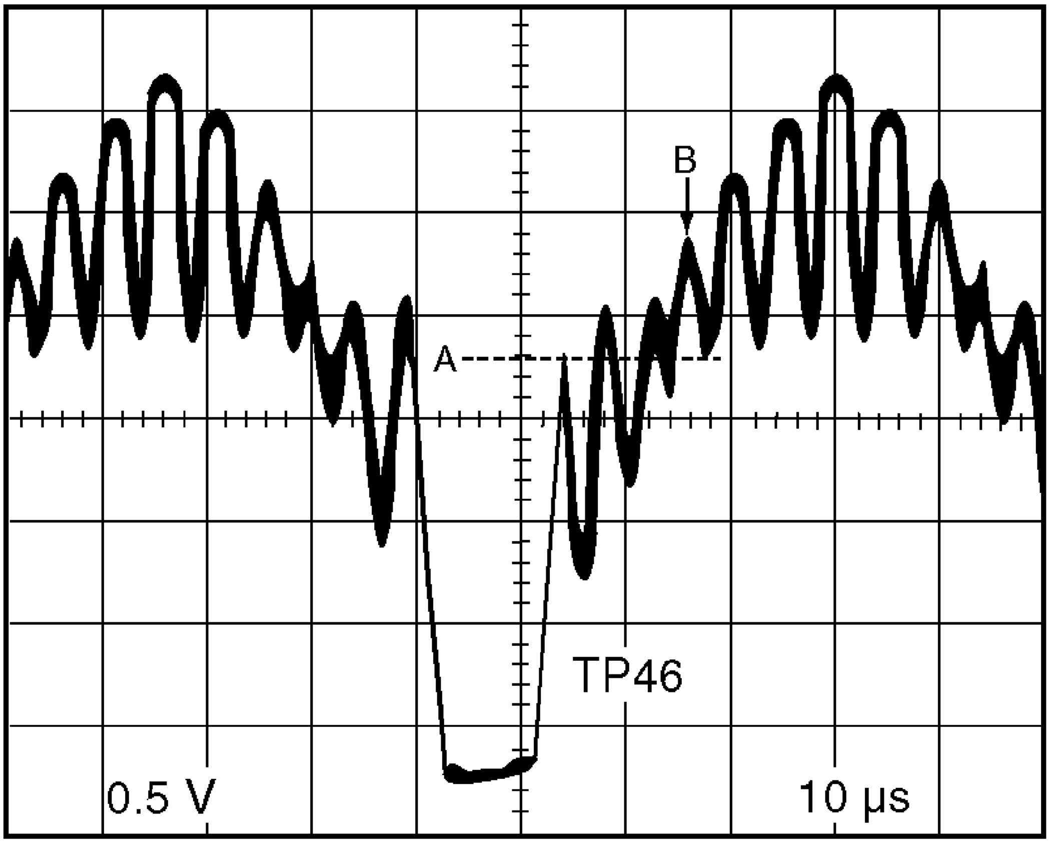
Mode :
STOP

Equipment :
Oscilloscope,
NTSC Video Pattern Generator

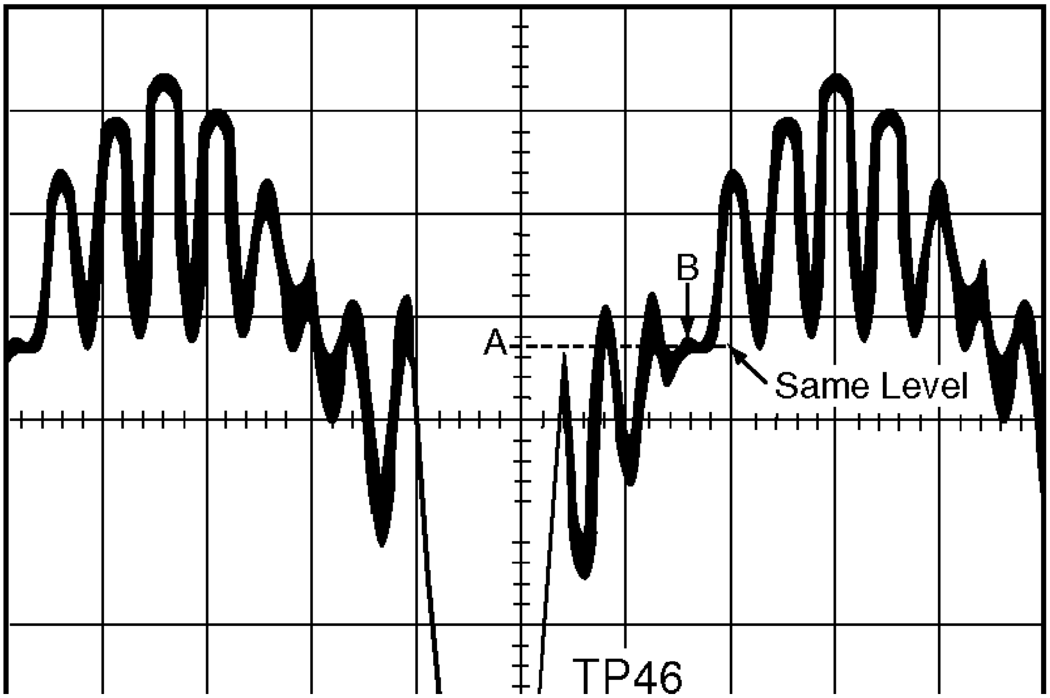
1. Supply the Rainbow Color Bar signal to Antenna Input Terminal.
2. Select SUB BRIGHT, B DRV and R DRV in EVR adjustment mode. Then after making a note of the original value and adjust as follows.
   SUB BRIGHT= D0
   B DRV= FF
   R DRV= FE
3. Connect the Oscilloscope to TP46 on the CRT C.B.A.
4. Select SUB TINT in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.

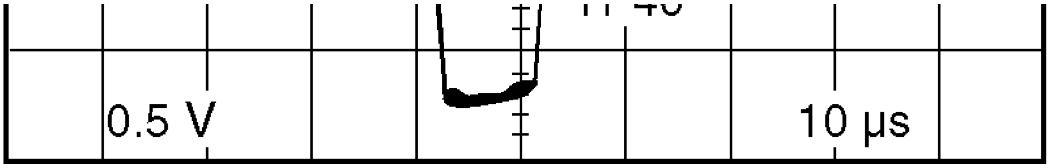
Fig. E10-1

(BEFORE ADJUSTMENT)



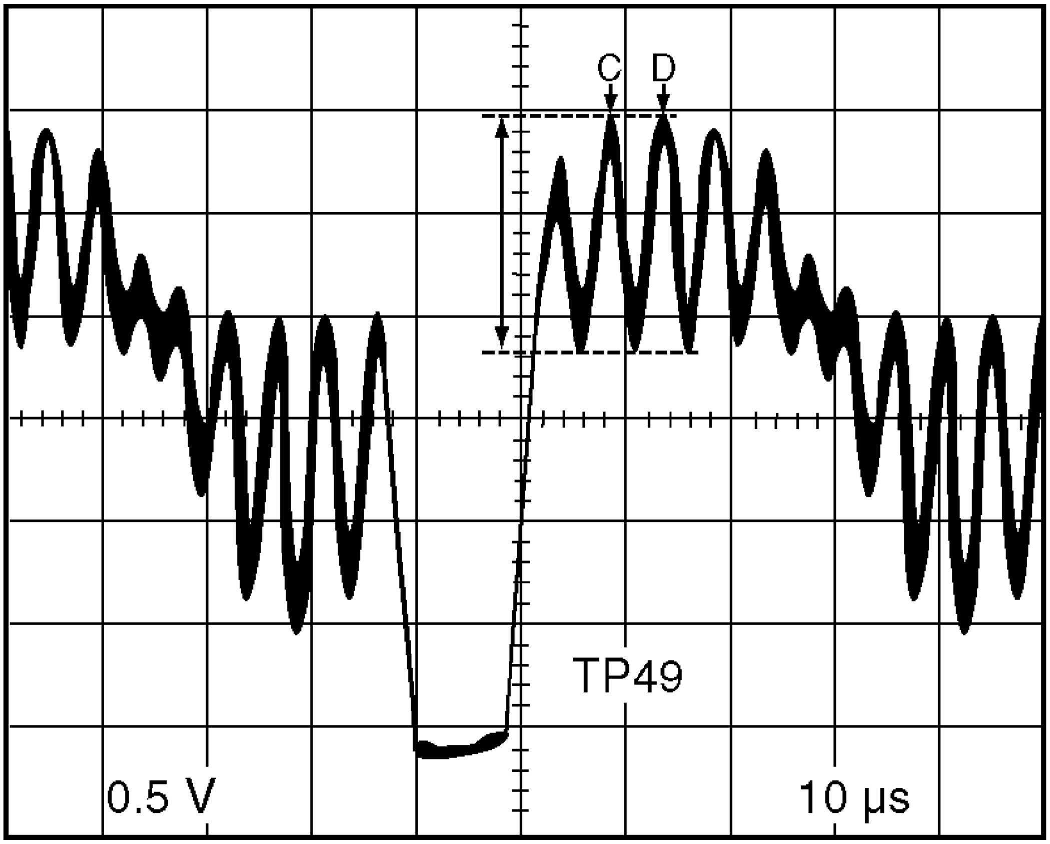
(AFTER ADJUSTMENT)





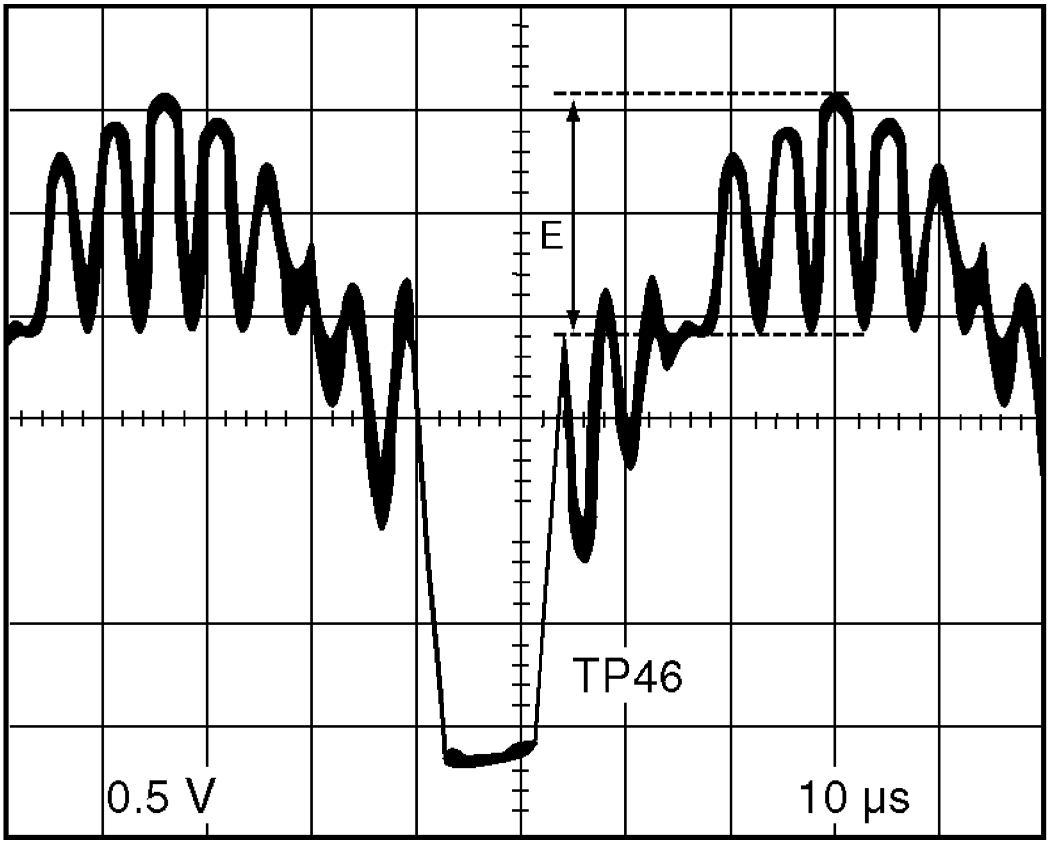
5. Connect the Oscilloscope to TP49 on the CRT C.B.A.
6. Select SUB COLOR in EVR adjustment mode and adjust which higher level that level C or D is 1.1 V[p-p]±0.1 V[p-p].

Fig. E10-2



7. Connect the Oscilloscope to TP46 on the CRT C.B.A.
8. Select DECODE GAIN in EVR adjustment mode and adjust so that level E is 1.2 V[p-p]±0.1 V[p-p].

Fig. E10-3



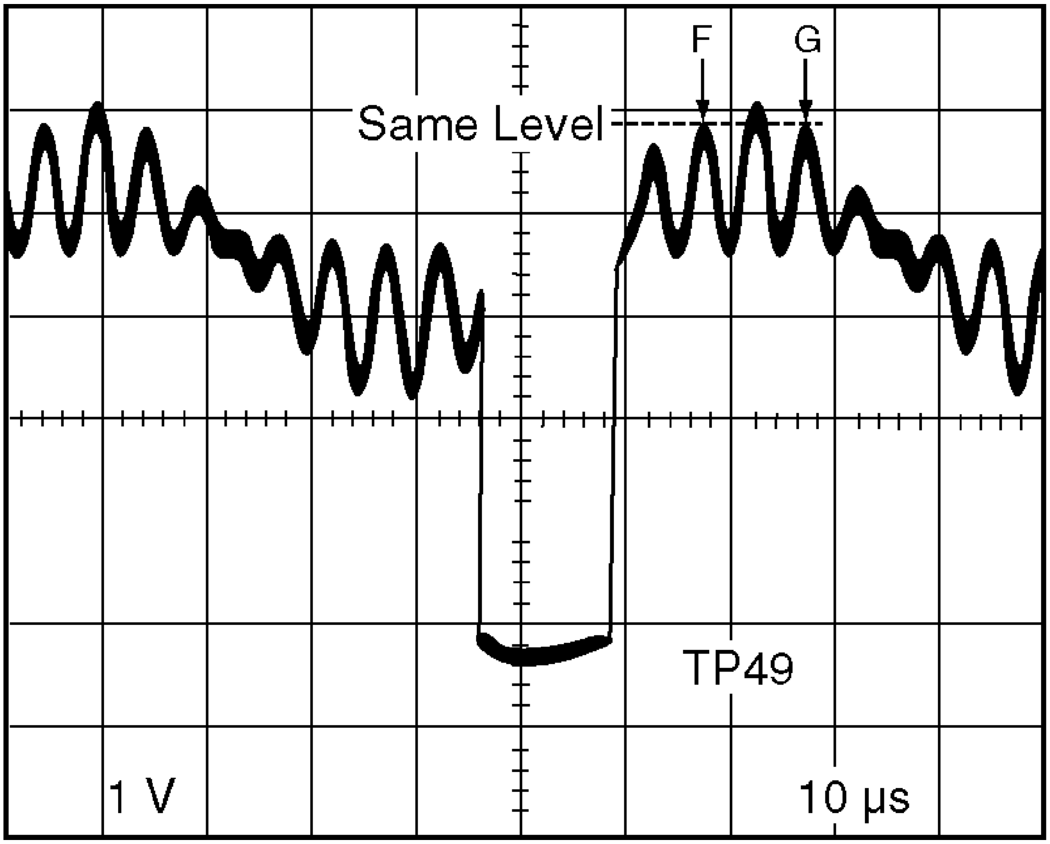
9. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input. ("-T" is displayed on the screen.)

10. Supply the Rainbow Color Bar signal to Antenna Input Terminal.

11. Connect the Oscilloscope to TP49 on the CRT C.B.A.

12. Select SUB TINT in EVR adjustment mode and adjust so that level F and G should be equal in amplitude.

Fig. E10-3

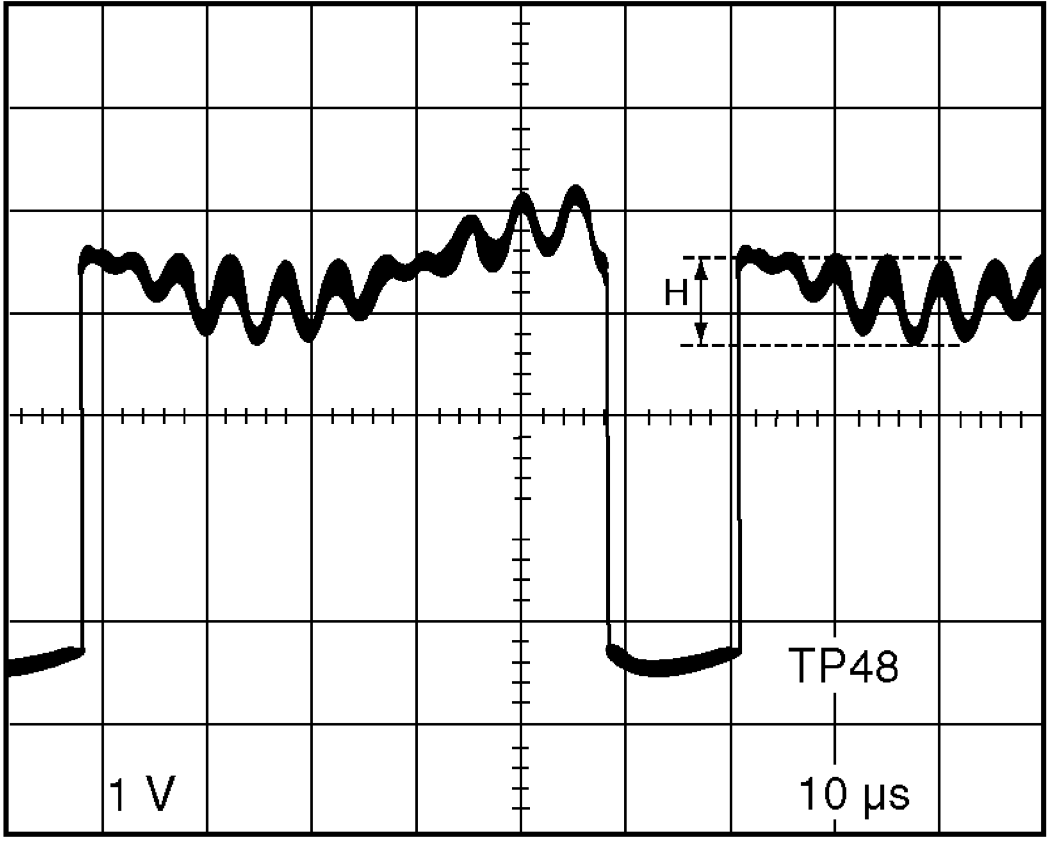


13. Connect the Oscilloscope to TP48 on the CRT C.B.A.

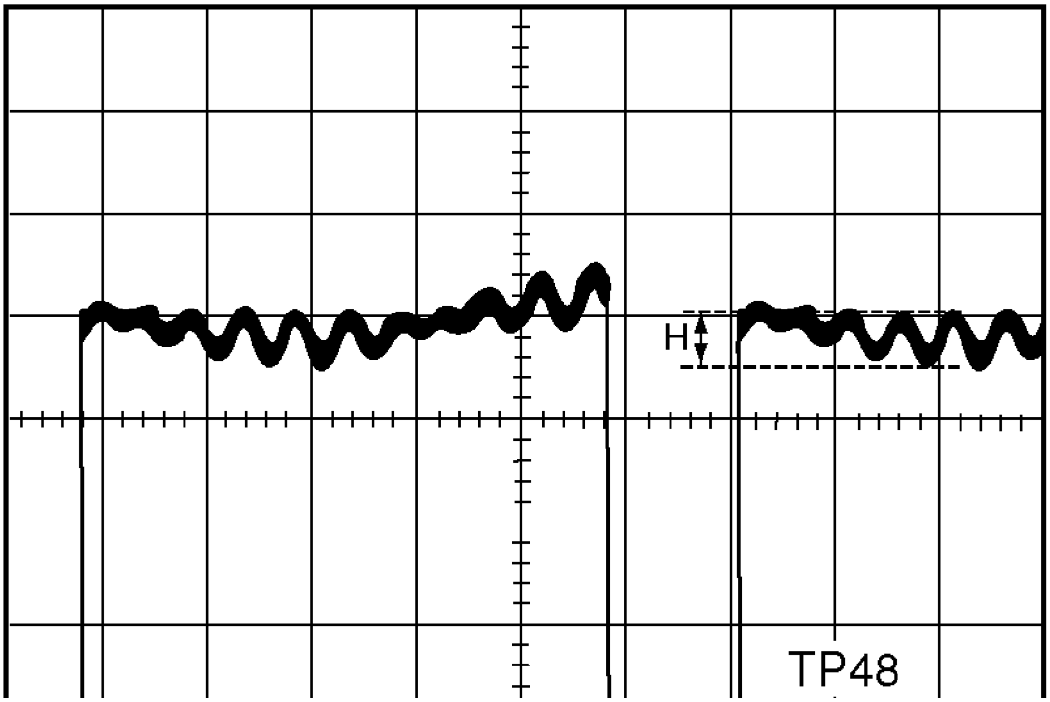
14. Select SUB COLOR in EVR adjustment mode and adjust so that level H is 0.42 V[p-p]±0.03 V[p-p].

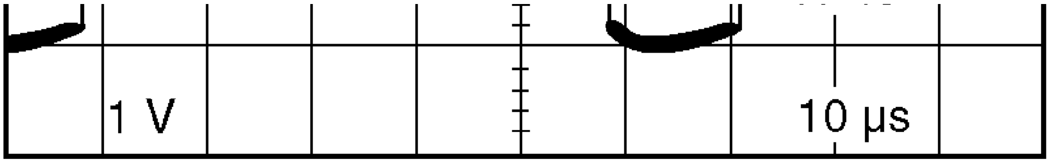
Fig. E10-4

(BEFORE ADJUSTMENT)



(AFTER ADJUSTMENT)





15. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 1 UNIT input. ("-R" is displayed on the screen.)
16. Connect the Oscilloscope to TP49 on the CRT C.B.A.
17. Select R-SUB TINT in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.
18. Connect the Oscilloscope to TP48 on the CRT C.B.A.
19. Select R-SUB COLOR in EVR adjustment mode and adjust so that level C is 0.42 V[p-p]±0.03 V[p-p].

7.3.15. DYNAMIC FOCUS PHASE ADJUSTMENT

Purpose:
To set the optimum Focus.

Symptom of Misadjustment:
The picture is out of Focus.

Test Point :

Adjustment :
FOCUS CONTROL (F1)
(Flyback Transformer),
FOCUS CONTROL (F2)
(Flyback Transformer),
R936 (DEFLECTION C.B.A.)

Specification :
Refer to descriptions below.

Input :
Antenna Input Terminal,
Monoscope Pattern Signal,
Crosshatch Pattern Signal

Mode :
STOP

Equipment :
NTSC Video Pattern Generator

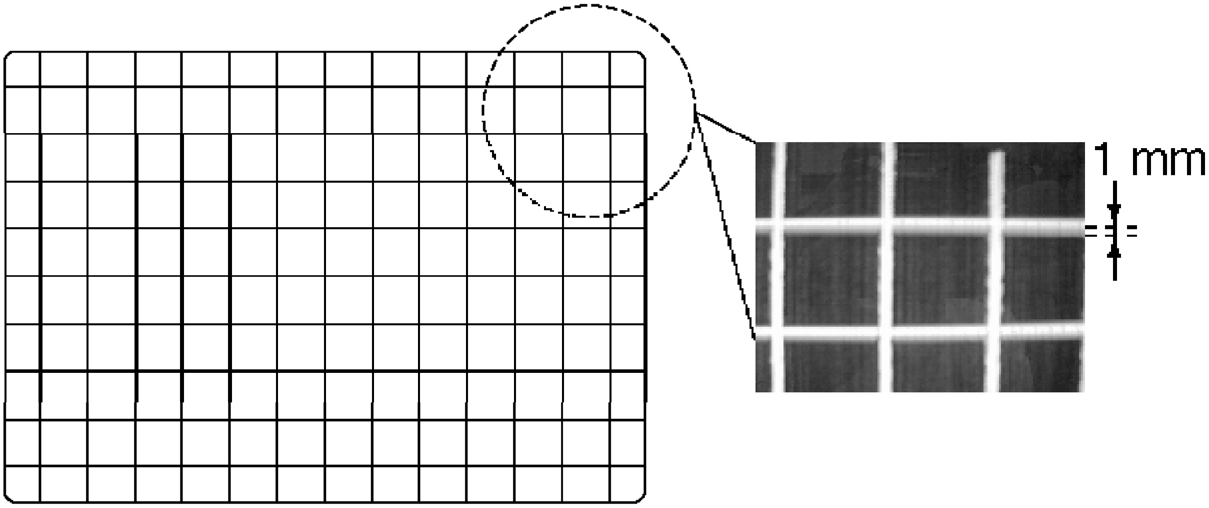
1. Supply a Monoscope Pattern Signal to the Antenna Input Terminal.

2. Adjust the FOCUS CONTROL (F1) on the Flyback Transformer so that the vertical line is the sharpest.

3. Supply a Crosshatch Pattern Signal to the Antenna Input Terminal.

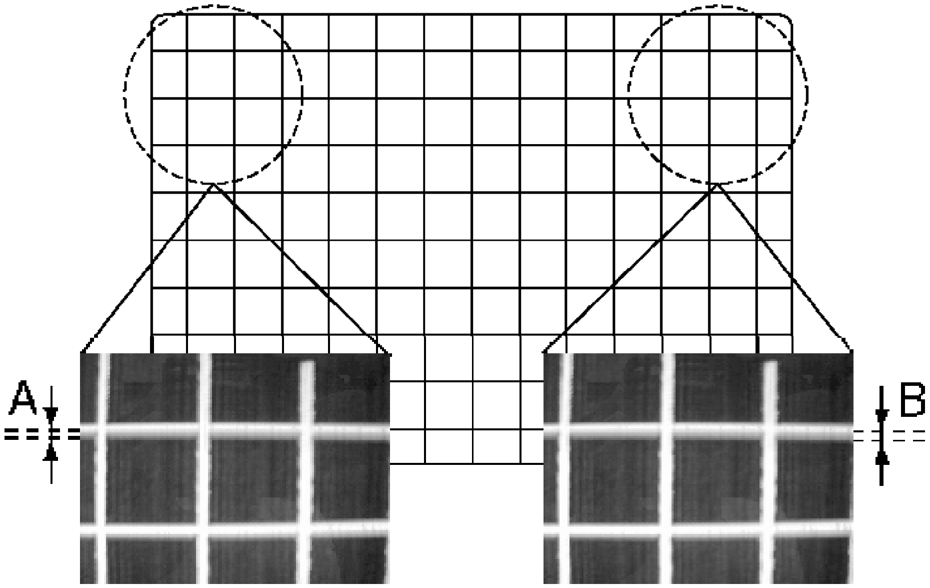
4. Adjust the FOCUS CONTROL (F2) on the Flyback Transformer so that the aberration of horizontal line is 1 mm.

Fig. E11-1



5. Adjust the R936 (DYN. PHASE ADJ) so that A is approximately equal to height B.

Fig. E11-2



NOTE:

Be sure to perform FOCUS ADJUSTMENT after DYNAMIC FOCUS PHASE ADJUSTMENT is completed.

7.3.16. FOCUS ADJUSTMENT

Purpose:

To set the optimum Focus.

Symptom of Misadjustment:

The picture is out of Focus.

Test Point :

TP551, TP552 (TV MAIN C.B.A.)

Adjustment :

FOCUS CONTROL (F1)
(Flyback Transformer),
FOCUS CONTROL (F2)
(Flyback Transformer),
SUB BRIGHT (EVR)

Specification :

Refer to descriptions below.

Input :

Antenna Input Terminal,
Monoscope Pattern Signal

Mode :
STOP

Equipment :
DVM,
NTSC Video Pattern Generator

1. Turn off the set and connect DVM between TP551 and TP552 on the TV MAIN C.B.A.
2. Turn on the set.
   Set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input.
   Enter EVR adjustment mode refer to "HOW TO ENTER EVR ADJUSTMENT MODE."
3. Supply a Monoscope Pattern Signal to the Antenna Input Terminal.
4. Select SUB BRIGHT in EVR adjustment mode and adjust so that the voltage is 17.0 V±1.0 V.
5. Adjust the FOCUS CONTROL (F1) on the Flyback Transformer so that the vertical line is the sharpest.
   Then, adjust FOCUS CONTROL (F2) on the Flyback Transformer so that the horizontal line is the sharpest.

7.3.17. SCAN SIZE ADJUSTMENT

Purpose :
To set the standard vertical and horizontal picture size.

Symptom of Misadjustment :
The picture size is on the vertical and horizontal axis is abnormal.

Test Point :
TP551, TP552, TP553, TP751
(TV MAIN C.B.A.)

Adjustment :
SUB BRIGHT (EVR),
V-EHT (EVR),
H-EHT (EVR),
V POSITION (EVR),
V HET (EVR),
V-LIN (EVR),

H-POS (EVR),
H PIN (EVR),
H WID (EVR),
R760 (TV MAIN C.B.A.)

Specification :

Refer to descriptions below.

Input :

Video Input Jack,
Monoscope Pattern Signal

Mode :

STOP

Equipment :

DVM, NTSC Video Pattern Generator

1. Turn off the set and connect DVM between TP551 and TP552.

2. Turn on the set.
Set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input.
Enter EVR adjustment mode refer to "HOW TO ENTER EVR ADJUSTMENT MODE."
("-T" is displayed on the screen.)

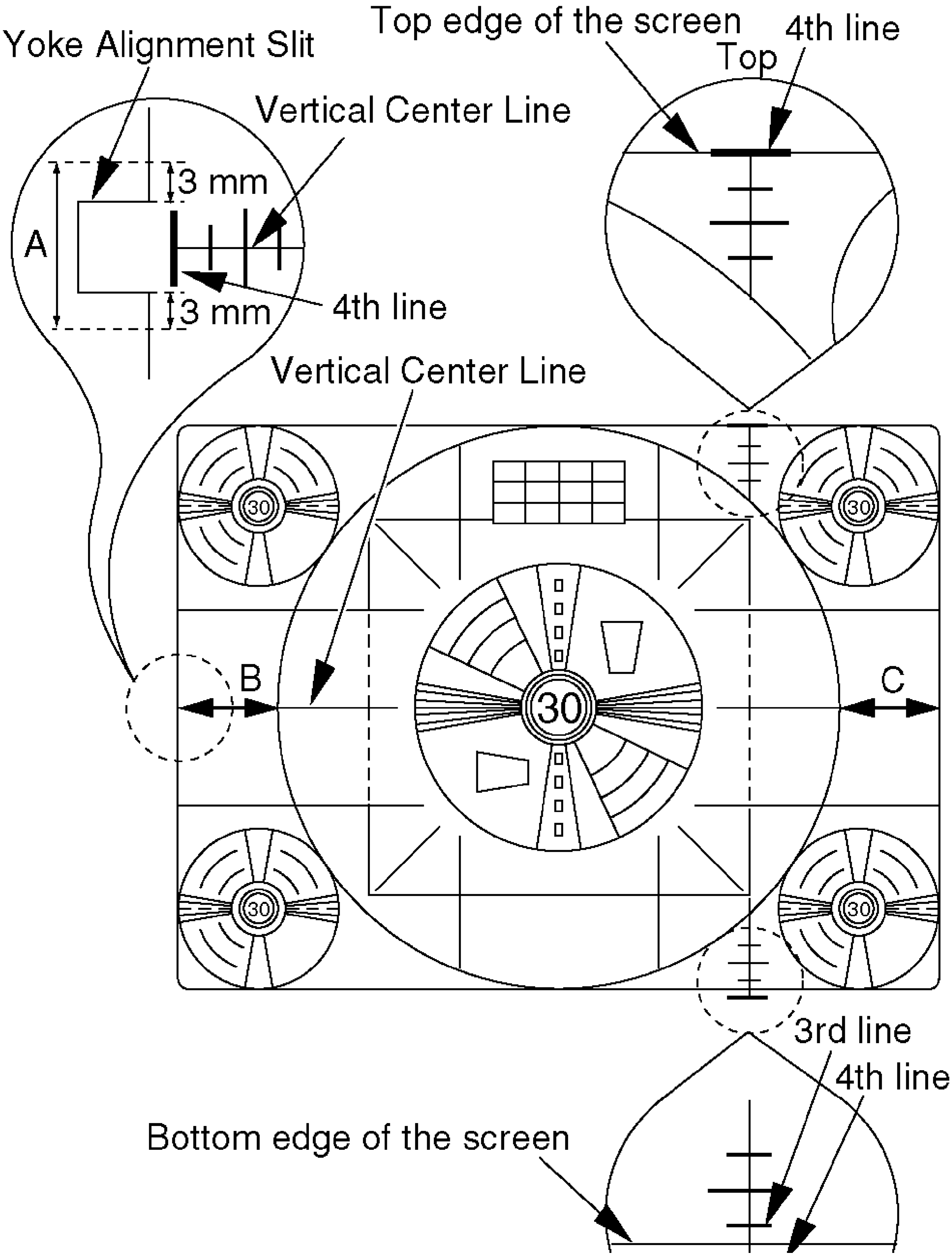
3. Supply a Monoscope Pattern Signal to the Antenna Input Terminal.

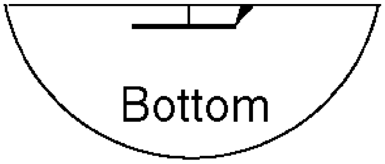
4. Select SUB BRIGHT in EVR adjustment mode and adjust so that the voltage is 17.0 V±1.0 V.

5. Select V-EHT and H-EHT in EVR adjustment mode and adjust as follows.
V-EHT= "03"
H-EHT= "06"

6. Select V POSITION in EVR adjustment mode and adjust Vertical Center Line is within the limits of A.

Fig. E12


Yoke Alignment Slit
Top edge of the screen
4th line
Top
Vertical Center Line
3 mm
A
3 mm
4th line
Vertical Center Line
30
30
30
B
30
C
30
30
3rd line
4th line
Bottom edge of the screen



7. Select V HET and V-LIN in EVR adjustment menu and adjust so that the top 4th line is just in view.
8. Confirm that the bottom 3rd line is in view and that the bottom 4th line is out of view.
   If the line are not positioned correctly, repeat the above steps 6 and 7 until the line is positioned correctly.
9. Select H-POS in EVR adjustment menu and adjust so that B is approximately equal to width C.
10. Select H PIN in EVR adjustment mode and adjust vertical line is straight. ("-R" is displayed on the screen.)
11. Select H WID in EVR adjustment menu and adjust so that the left 4th line is just in view.
12. Confirm that the right 4th line is just in view.
13. Turn off the set and connect DVM between TP751 and TP553.
14. Turn on the set and press MUTE key on the remote control.
15. Adjust R760 so that the voltage is 4.0 V±0.1 V.

7.3.18. DEFLECTION ADJUSTMENT

Purpose :

To set the optimun picture.

Symptom of Misadjustment :

The picture is distortion.

Test Point :

Adjustment :

H PIN (EVR),
H-KEY (EVR),
H-BPN (EVR),
H-TPN (EVR),
V POSITION (EVR),
V HET (EVR),

V-LIN (EVR),
H-POS (EVR),
H WID (EVR),
V-SCR (EVR)

Specification :

Refer to descriptions below.

Input :

Video Input Jack,
Crosshatch Pattern Signal,
Monoscope Pattern Signal

Mode :

STOP

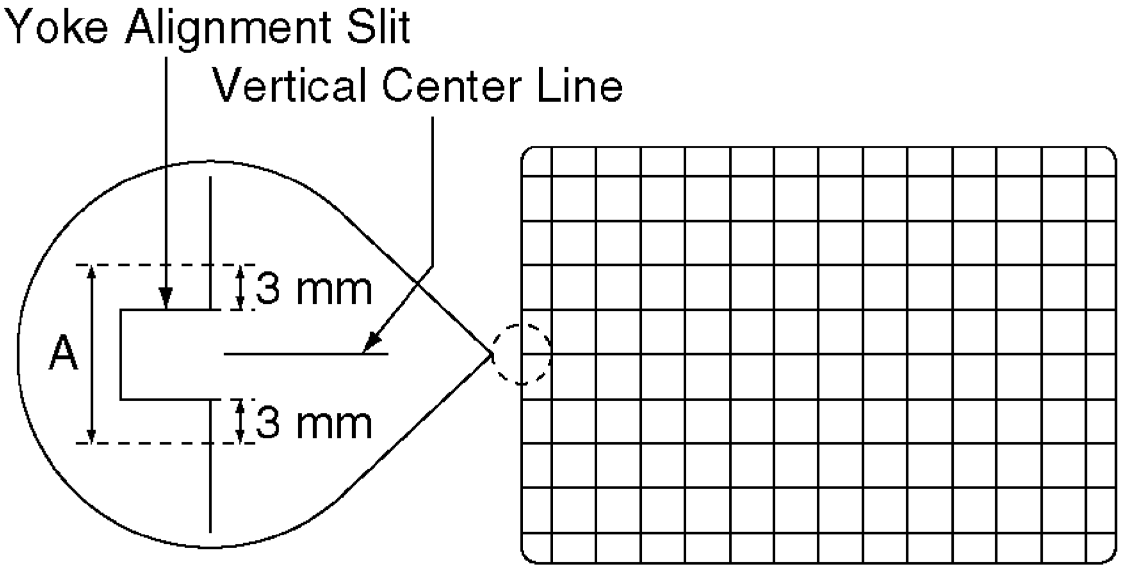
Equipment :

NTSC Video Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Antenna Input Terminal.

2. Confirm that the Vertical Center Line is within the limits of A.

Fig. E13-1

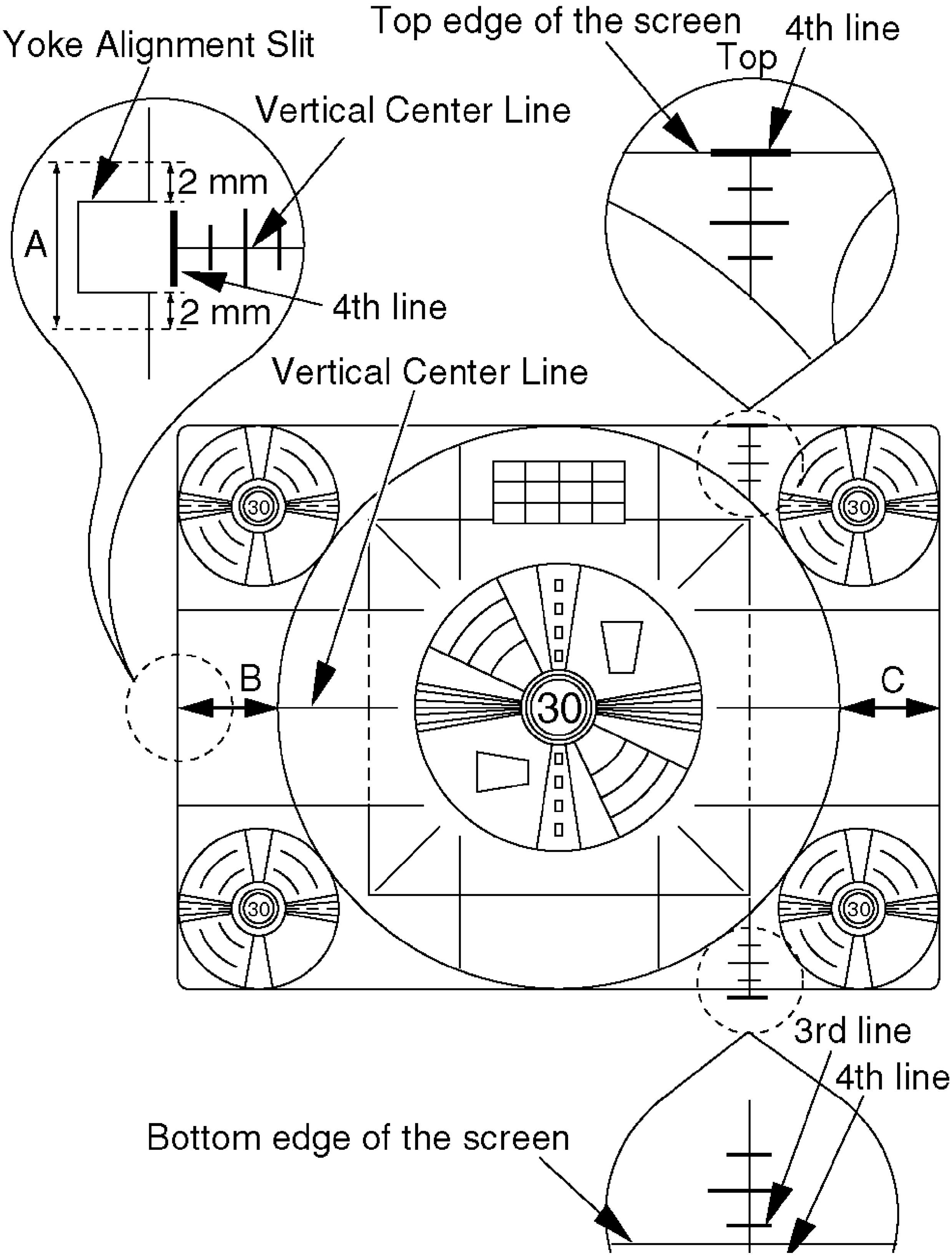

Yoke Alignment Slit
Vertical Center Line
3 mm
A
3 mm

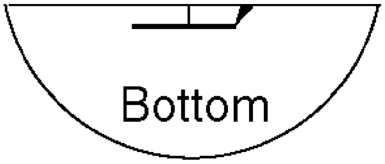
3. Select H PIN in EVR adjustment mode and adjust so that vertical lines should be

almost straight.

4. **Select H-KEY in EVR adjustment mode and adjust so that vertical lines should be almost straight.**
5. **Select H-BPN in EVR adjustment mode and adjust so that lower side of vertical lines should be almost straight.**
6. **Select H-TPN in EVR adjustment mode and adjust so that higher side of vertical lines should be almost straight.**
7. **Supply a Monoscope Pattern Signal to the Antenna Input Terminal.**
8. **Select V POSITION in EVR adjustment mode and adjust Vertical Center Line is within the limits of A.**

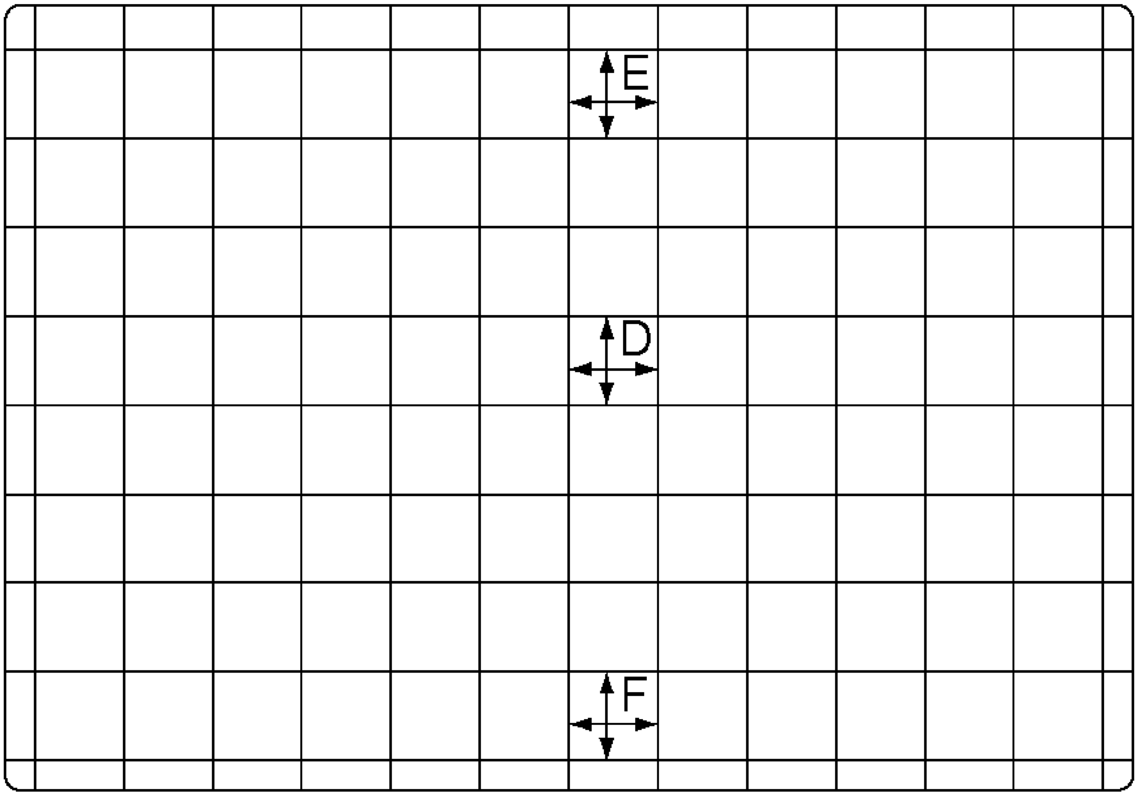
Fig. E13-2


Yoke Alignment Slit
Top edge of the screen
4th line
Top
Vertical Center Line
2 mm
A
2 mm
4th line
Vertical Center Line
30
B
C
3rd line
4th line
Bottom edge of the screen



9. Select V HET and V-LIN in EVR adjustment menu and adjust so that the top 4th line is just in view.
10. Confirm that the bottom 3rd line is in view and that the bottom 4th line is out of view.
If the line are not positioned correctly, repeat the above steps 8 and 9 until the line is positioned correctly.
11. Select H-POS in EVR adjustment menu and adjust so that B is approximately equal to width C.
12. Select H WID in EVR adjustment menu and adjust so that the left 4th line is just in view.
13. Supply a Crosshatch Pattern Signal to the Antenna Input Terminal.
14. Select V-SCR in EVR adjustment mode and adjust so that D is approximately equal to size E and F.

Fig.E13-3



15. Supply a Monoscope Pattern Signal to the Antenna Input Terminal.

16. Confirm Vertical Center Position and Vertical Height as shown in Fig. E13-2. If it is not correctly, repeat the above steps 8, 9, 13 and 14 until the Vertical Center Position and Vertical Height is correctly.

7.3.19. WHITE BALANCE ADJUSTMENT

Purpose:

To set the standard white level for each color temperature.

Symptom of Misadjustment :

White becomes bluish or reddish.

Test Point :

TP50 (CRT C.B.A)

Adjustment :

FOCUS CONTROL (F1)
(Flyback Transformer),

FOCUS CONTROL (F2)
(Flyback Transformer),
SCREEN CONTROL (Flyback Transformer),
SUB BRIGHT (EVR),
R-SUB BRIGHT (EVR),
B DRV (EVR),
R DRV (EVR),
R CUT (EVR),
G CUT (EVR),
B CUT (EVR)

Specification :

Refer to descriptions below.

Input :

Antenna Input Terminal,
Monoscope Pattern Signal,
White Pattern Signal

Mode :

STOP

Equipment :

NTSC Video Pattern Generator,
White Pattern Generator,
Oscilloscope

1. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input.
("-T" is displayed on the screen.)

2. Supply a Monoscope Pattern Signal to the Antenna Input Terminal.

3. Connect the Oscilloscope to TP50 on the CRT C.B.A.
(Use TP47 for GND.)

4. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.

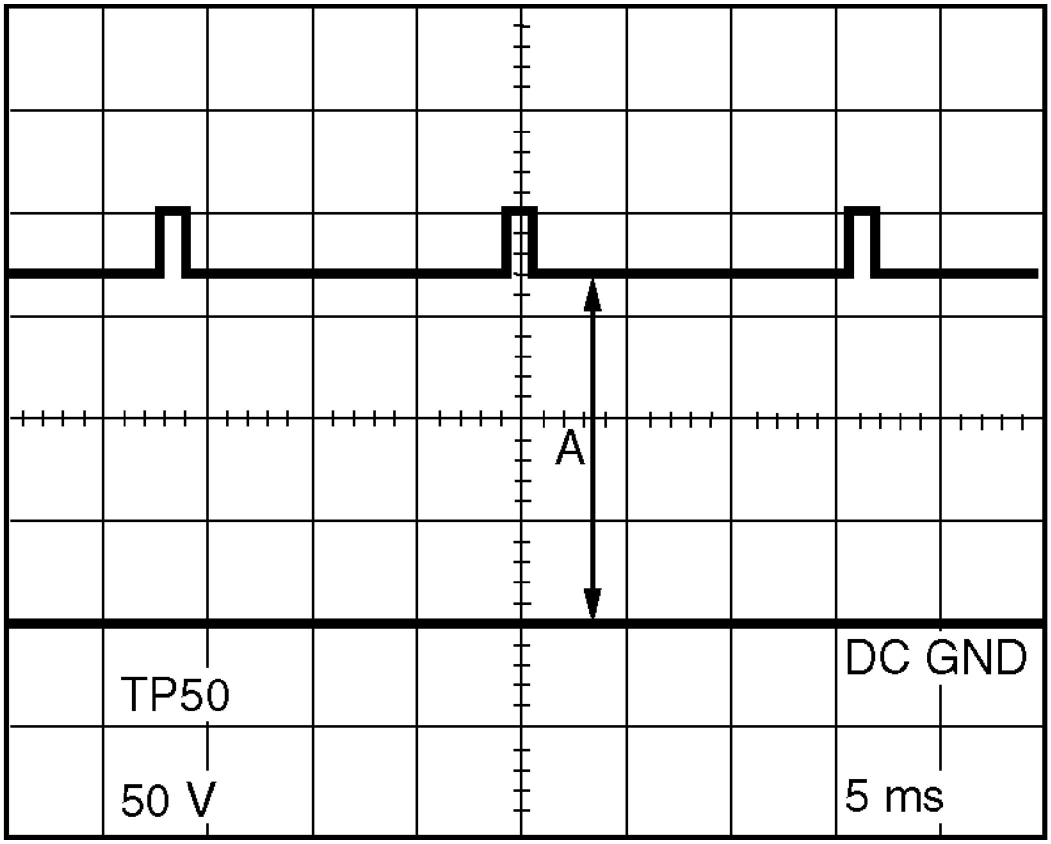
5. Adjust the FOCUS CONTROL (F1) on the Flyback Transformer so that the vertical line is the sharpest.
Then, adjust FOCUS CONTROL (F2) on the Flyback Transformer so that the horizontal line is the sharpest.

6. Press DISPLAY key (Service Switch) on the remote control for collapse scan.
(Refer to How to Enter Service Mode.)

7. Turn the SCREEN CONTROL on Flyback Transformer fully counterclockwise.

8. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is 175 VDC±5 VDC.

Fig. E14



9. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where green is first observed.

10. In EVR adjustment mode, select the two colors the following control functions (B CUT, R CUT) and adjust so that the horizontal line becomes white.

11. Supply a White Pattern Signal to the Antenna Input Terminal.

12. Press DISPLAY key on the remote control again to return for full frame scan.

13. Select R DRV and B DRV in EVR adjustment mode and adjust so that the entire screen is white.

14. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (80) and while turning SUB BRIGHT value from minimum (80) up to maximum (7D), confirm that the screen is tracking the White Pattern properly. Repeat the above steps 6, 10, 12, and 13 until the screen

is properly tracking the White Pattern.

15. Set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 1 UNIT input. ("-R" is displayed on the screen.)
16. Connect the Oscilloscope to TP50 on the CRT C.B.A.
(Use TP47 for GND.)
17. Select R-SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
18. Adjust the FOCUS CONTROL (F1) on the Flyback Transformer so that the vertical line is the sharpest.
Then, adjust FOCUS CONTROL (F2) on the Flyback Transformer so that the horizontal line is the sharpest.
19. Press DISPLAY key (Service Switch) on the remote control for collapse scan.
(Refer to How to Enter Service Mode.)
20. Turn the SCREEN CONTROL on Flyback Transformer fully counterclockwise.
21. Adjust R-SUB BRIGHT in EVR adjustment mode so that the level A is 175 VDC±5 VDC.
22. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where green is first observed.
23. In EVR adjustment mode, select the two colors the following control functions (B CUT, R CUT) and adjust so that the horizontal line becomes white.
24. Supply a White Pattern Signal to the Antenna Input Terminal.
25. Press DISPLAY key on the remote control again to return for full frame scan.
26. Select R DRV and B DRV in EVR adjustment mode and adjust so that the entire screen is white.
27. Select R-SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (80) and while turning SUB BRIGHT value from minimum (80) up to maximum (7D), confirm that the screen is tracking the White Pattern properly. Repeat the above steps 19, 23, 25, and 26 until the screen is properly tracking the White Pattern.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

7.3.20. SUB BRIGHTNESS ADJUSTMENT

Purpose :

To set the optimum brightness level.

Symptom of Misadjustment :

The picture is too white or too black.

Note:

Perform this adjustment in a darkened room.

Test Point :

Adjustment :

SUB BRIGHT (EVR),
R-SUB BRIGHT (EVR)

Specification :

Refer to descriptions below.

Input :

Mode :

STOP

1. Do not input any signal to the unit.
2. Set INPUT SELECT item to LINE in SET UP TV menu to display black screen.
3. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 2 UNIT input.
   ("-T" is displayed on the screen.)
4. Select SUB BRIGHT in EVR adjustment mode, and adjust so that the black screen starts to turn grey (lighting only).
5. Set to PINP mode, and then set PARENT PICTURE to UHF/VHF TUNER/TV DEMODULATOR 1 UNIT input.
   ("-R" is displayed on the screen.)
6. Select R-SUB BRIGHT in EVR adjustment mode, and adjust so that the black screen starts to turn grey (lighting only).

7.3.21. PINP CHROMINANCE LEVEL ADJUSTMENT

Purpose :

To set the optimum chrominance level.

Symptom of Misadjustment :
The CHILD PICTURE is too white or too black.

Test Point :
TP5312 (TV PROCESS C.B.A.)

Adjustment :
COLOR (EVR)

Specification :
Refer to descriptions below.

Input :
Video Input Jack,
100 % chrominance signal

Mode :
STOP

Equipment :
NTSC Video Pattern Generator,
Oscilloscope

1. Set to PINP mode, and then move CHILD PICTURE to the upper left on monitor.
2. Supply a 100 % chrominance signal to the Video Input Jack.
3. Connect the Oscilloscope to TP5312 on the TV PROCESS C.B.A.
4. Select COLOR in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.

Fig. E15-1

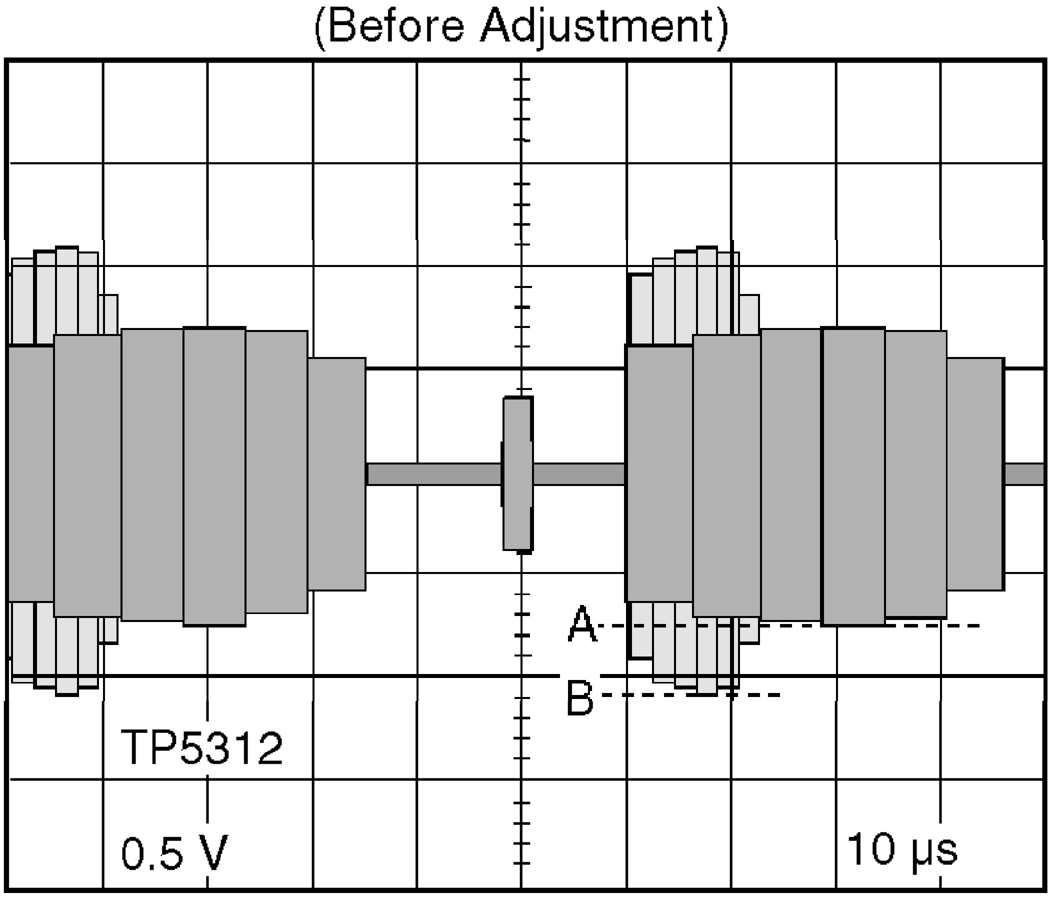
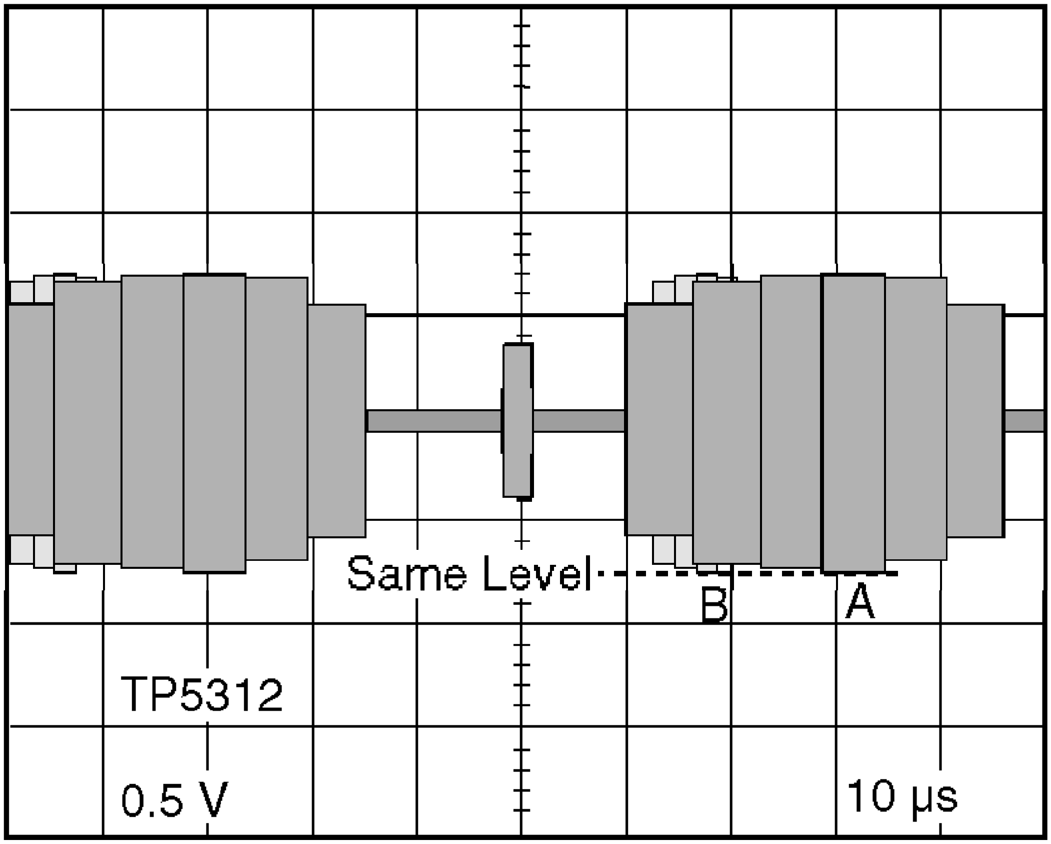

(Before Adjustment)

Fig. E15-2

(After Adjustment)



7.3.22. PINP LUMINANCE LEVEL ADJUSTMENT

Purpose :
To set the optimum luminance level.

Symptom of Misadjustment :
The CHILD PICTURE is too light or too dark.

Test Point :
TP5305 (TV PROCESS C.B.A.)

Adjustment :
PCONTRAST (EVR)

Specification :
Refer to descriptions below.

Input :
Video Input Jack,
Color Bar signal

Mode :
STOP

Equipment :
NTSC Video Pattern Generator,
Oscilloscope

1. **Set to PINP mode, and then move CHILD PICTURE to the upper left on monitor.**
2. **Supply a Color Bar signal to the Video Input Jack.**
3. **Connect the Oscilloscope to TP5305 on the TV PROCESS C.B.A.**
4. **Select PCONTRAST in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.**

Fig. E16-1

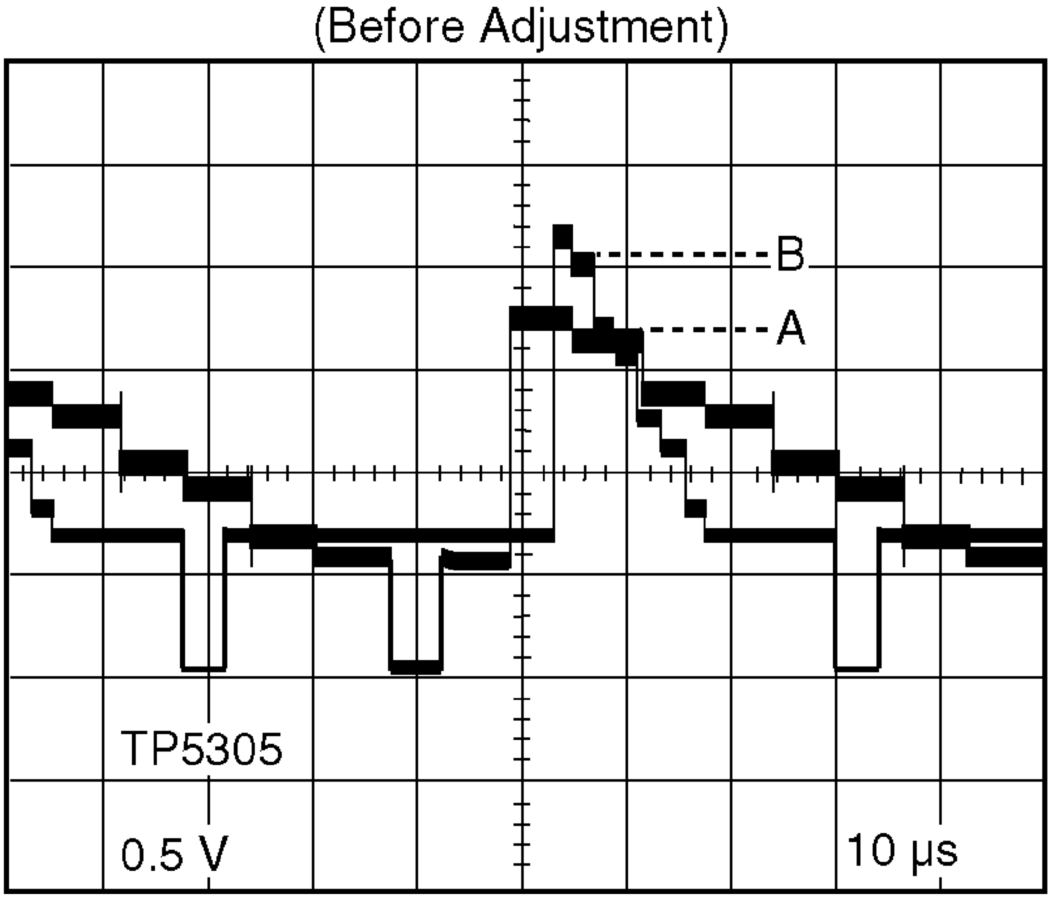
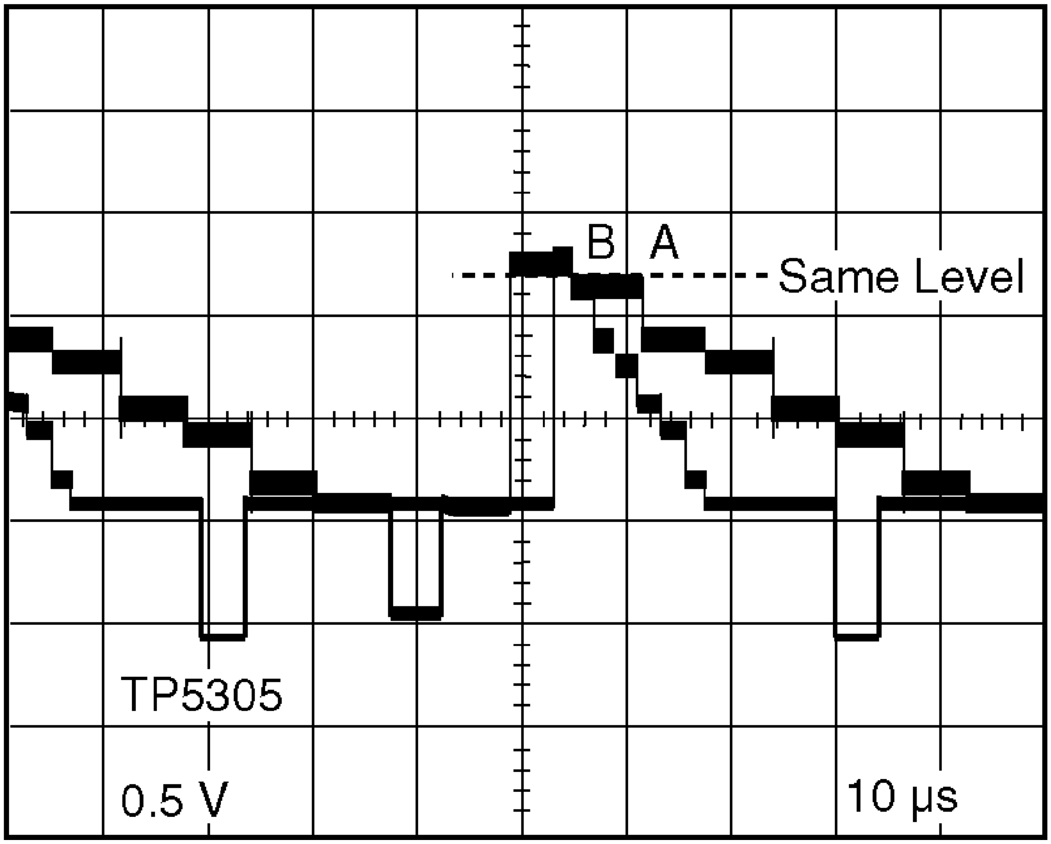


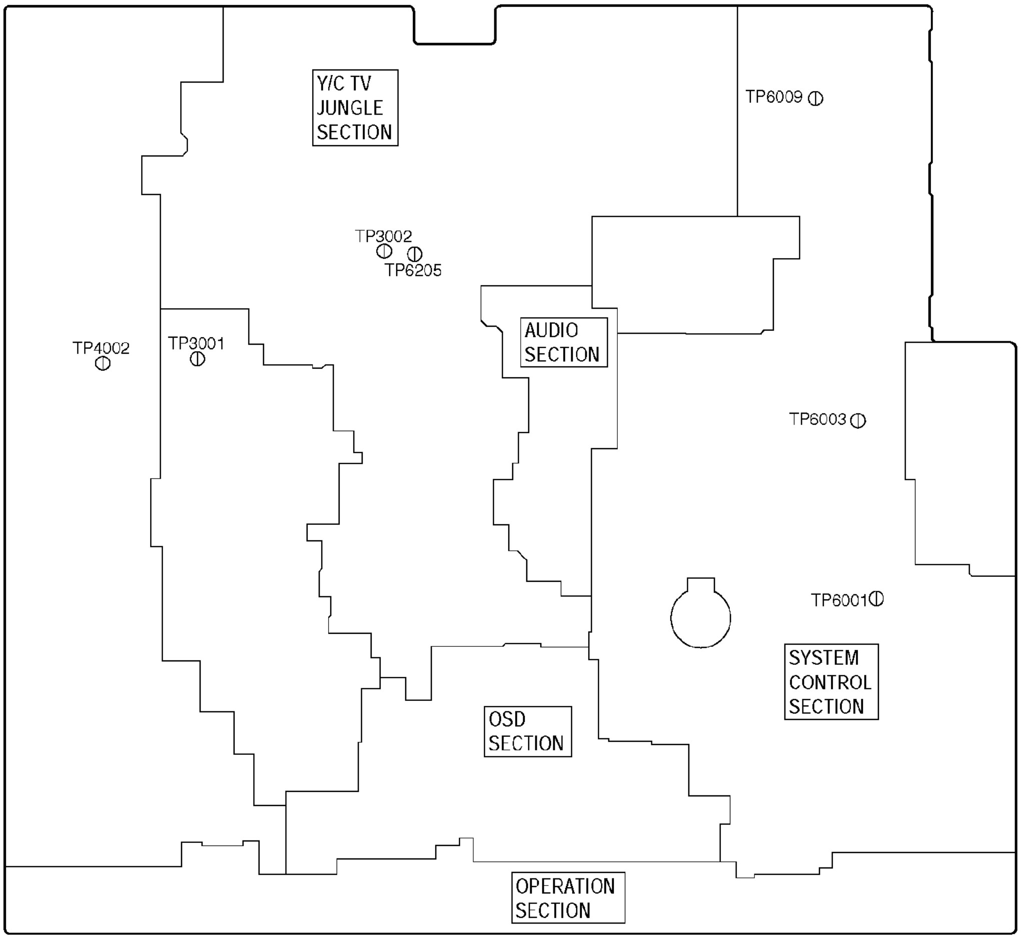
Fig. E16-2

(After Adjustment)



7.4. TEST POINTS AND CONTROL LOCATION

Main C.B.A.


Y/C TV
JUNGLE
SECTION
TP6009
TP3002
TP6205
AUDIO
SECTION
TP4002
TP3001
TP6003
TP6001
SYSTEM
CONTROL
SECTION
OSD
SECTION
OPERATION
SECTION

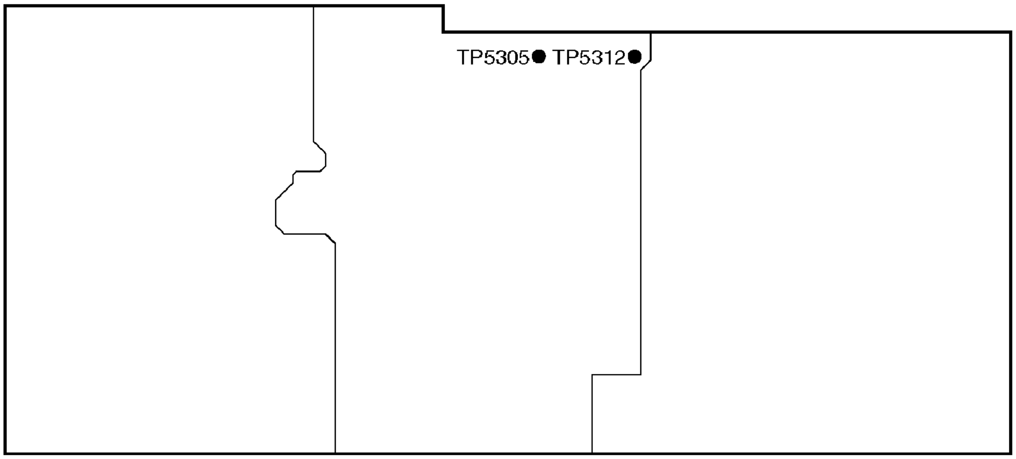
(Component Side)

FUNCTION OF IMPORTANT TEST POINTS	
TP3001	Video Signal
TP3002	REC/PB Video envelope signal
TP4002	Normal Audio signal
TP6001	Service Test Point (inhibit sensors)
TP6003	Defeat Auto tracking function (connect to +5V(TP6009))
TP6009	+5V
TP6205	Head SW.

Test Point Information

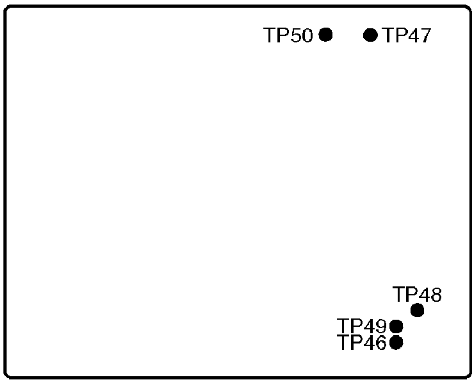
● Test Point with a Test Pin.
⦶ Test Point with a jumper wire across a hole in the P.C.B.
○ Test Point with no Test Pin.

TV PROCESS C.B.A.


TP5305
TP5312

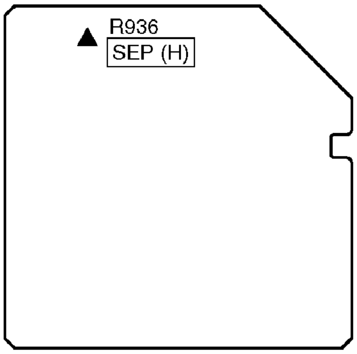
(Foil Side)

CRT C.B.A.


TP50
TP47
TP48
TP49
TP46

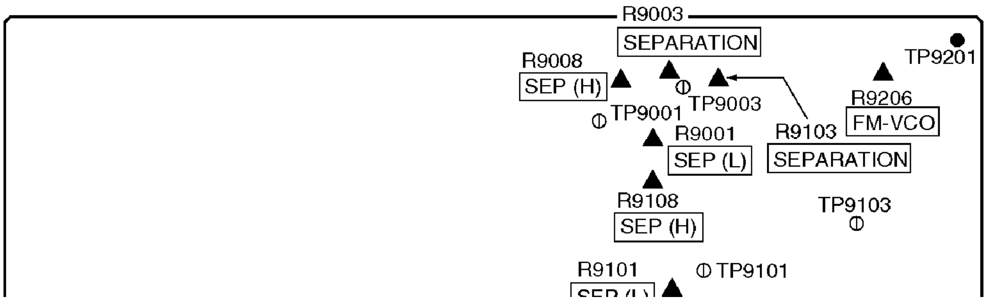
(Foil Side)

DEFLECTION C.B.A.



(Foil Side)

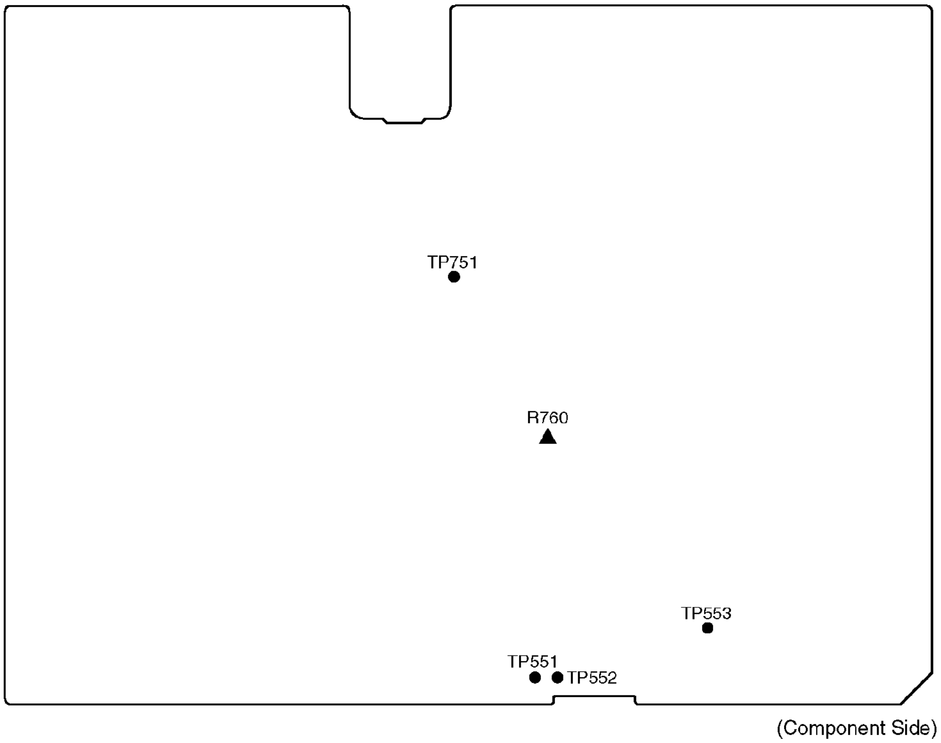
Audio C.B.A.


R9003
SEPARATION
R9008
SEP (H)
TP9201
TP9003
TP9001
R9206
FM-VCO
R9001
SEP (L)
R9103
SEPARATION
R9108
SEP (H)
TP9103
R9101
TP9101

SEP (L)
45 pin
P4206

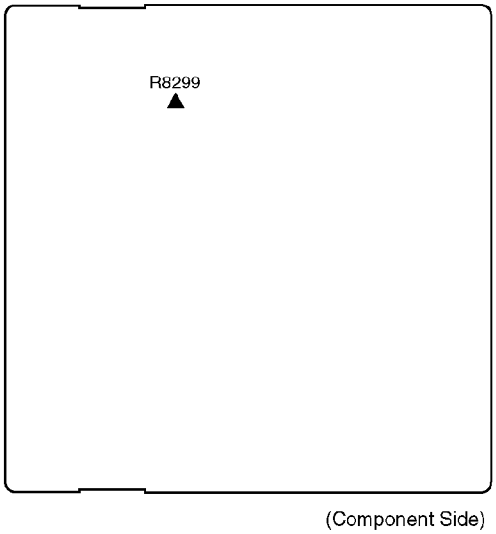
(Foil Side)

TV MAIN C.B.A.



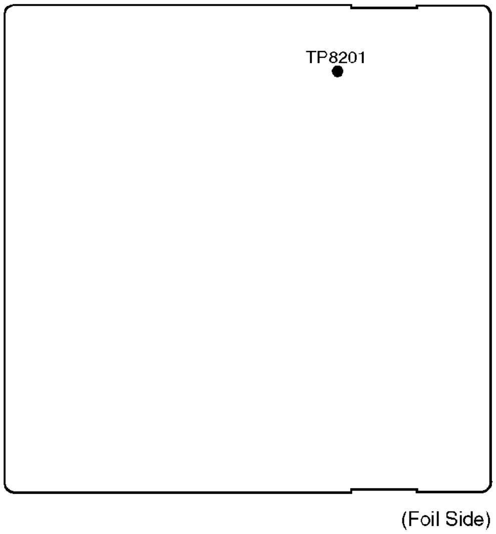
TP751
R760
TP553
TP551
TP552
(Component Side)

DVD DECODER C.B.A.
(COMPONENT SIDE)



R8299
(Component Side)

DVD DECODER C.B.A.
(FOIL SIDE)



TP8201
(Foil Side)

8. SCHEMATIC DIAGRAMS

8.1. SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

8.2. MAIN SCHEMATIC DIAGRAMS

8.3. AUDIO SCHEMATIC DIAGRAMS

8.4. TV PROCESS SCHEMATIC DIAGRAMS

8.5. POWER SUPPLY SCHEMATIC DIAGRAM

8.6. OPERATION SCHEMATIC DIAGRAM

8.7. TV MAIN SCHEMATIC DIAGRAMS

8.8. CRT SCHEMATIC DIAGRAM

8.9. DEFLECTION SCHEMATIC DIAGRAM

8.10. TUNER MAIN SCHEMATIC DIAGRAMS

8.11. Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM

8.12. CAPSTAN STATOR SCHEMATIC DIAGRAM

8.13. DVD DECODER SCHEMATIC DIAGRAMS

8.14. INTERCONNECTION SCHEMATIC DIAGRAM

8.15. VOLTAGE CHART

9. CIRCUIT BOARD LAYOUT

9.1. MAIN C.B.A.

9.2. AUDIO C.B.A.

9.3. TV PROCESS C.B.A.

9.4. POWER SUPPLY C.B.A.

9.5. OPERATION / CAPSTAN STATOR / Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

9.6. TV MAIN C.B.A.

9.7. CRT C.B.A.

9.8. DEFLECTION C.B.A.

9.9. TUNER MAIN C.B.A.

9.10. DVD DECODER C.B.A.

10. BLOCK DIAGRAMS

10.1. POWER SUPPLY BLOCK DIAGRAM

10.2. VIDEO SIGNAL PATH BLOCK DIAGRAM

10.3. VIDEO SELECTOR BLOCK DIAGRAM

10.4. PICTURE IN PICTURE BLOCK DIAGRAM

10.5. AUDIO SIGNAL PATH BLOCK DIAGRAM

10.6. TV STEREO SIGNAL PATH BLOCK DIAGRAM

10.7. Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM

10.8. SYSTEM CONTROL BLOCK DIAGRAM

10.9. SERVO BLOCK DIAGRAM

10.10. TV Y/C PROCESS BLOCK DIAGRAM

10.11. DVD BLOCK DIAGRAM

10.12. TROUBLESHOOTING HINTS

11. EXPLODED VIEWS

11.1. MECHANISM (TOP) SECTION

11.2. MECHANISM (BOTTOM) SECTION

11.3. CASSETTE UP COMPARTMENT SECTION

11.4. CHASSIS FRAME SECTION (1)

11.5. CHASSIS FRAME SECTION (2)

11.6. CHASSIS FRAME SECTION (3)

11.7. CHASSIS FRAME SECTION (4)

11.8. PACKING PARTS AND ACCESSORIES SECTION

12. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

12.1. REPLACEMENT NOTES

12.1.1. General Notes

1. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.
2. IMPORTANT SAFETY NOTICE
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. SPECIAL NOTE
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. Parts with mark "MKA" in Remarks column are supplied from MKA. Others are supplied from MKE.

7. Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.

12.1.2. Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. Main Cam Gear is supplied as a Main Cam Gear Kit (Ref. No. 8) only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.
3. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
4. Main Cam Push Nut (Ref. No. 414) is not reusable.
   If removed, install a new one.

12.1.3. Electrical Replacement Notes

1. Unless otherwise specified;
   All resistors are in Ω, 1/4 W, carbon, K = 1,000 Ω,
   M = 1,000 kΩ.
   All capacitors are in μF, P = μμF.
   All coils are in μH, M = 1,000 μH.
2. Abbreviation
   RTL: Retention Time Limited
   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
   NR: Non Repairable Board Ass'y
   MGF CHIP: Metal Glaze Film Chip
   C CHIP: Ceramic Chip
   COMPLX CMP: Complex Component
   W FLMPRF: Wirewound Flameproof
   C.B.A.: Circuit Board Assembly
   P.C.B.: Printed Circuit Board
   E.S.D.: Electrostatically Sensitive Devices
3. SERVICE OF CHIP PARTS
   When servicing chip parts, please use a soldering iron of less than 30 W. Refer

to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.

4. **When replacing 0 Ω resistor, a wire can be substituted for it.**
5. **When installing the IC2501 (AN3846SC or AN3845SC) or Capstan Stator C.B.A., be sure to apply Silicon Grease (VFK1301). Refer to "Capstan Stator C.B.A." of MECHANISM SECTION in DISASSEMBLY/ASSEMBLY PROCEDURES.**
6. **Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. 743 and 744) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/ TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.**
7. **EEP ROM IC (IC6004), MAIN C.B.A. replacement note:**
   After replacing EEP ROM IC (IC6004) or MAIN C.B.A., be sure to write the initial data with remote control.

12.2. MECHANICAL REPLACEMENT PARTS LIST

12.2.1. MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	VBSS0033	FULL ERASE HEAD	1
2	VXKS0890	MOTOR BLOCK UNIT	1
3	LSDB0045	TENSION ARM BOSS	1
4	VXDS0212	CAPSTAN HOLDER UNIT	1
5	LSMD0209	OPENER PIECE	1
8	VVGS0009	MAIN CAM GEAR KIT	2
9	LSDR0004	S REEL TABLE	1
10	LSDR0005	T REEL TABLE	1
11	VEGS0429	CYLINDER UNIT	1
	OR VEGS0451		
12	VEHS0583	AUDIO CONTROL/ERASE HEAD UNIT	1
14	LSDG0112	LIFT GEAR	1
16	VXDS0213	LOADING POST BASE-S UNIT	1
17	VXDS0214	LOADING POST BASE-T UNIT	1
18	VXLS1094	PINCH ARM UNIT	1
19	LSDG0110	INTERMEDIATE GEAR A	1
20	VXLS1101	P5 ARM UNIT	1
21	LSML0131	DRIVE RACK ARM	1
22	VXLS1103	TENSION CONTROL ARM UNIT	1
23	LSMX0129	OIL SEAL	1
27	VXLS1100	T BRAKE UNIT	1
29	VXLS1102	TENSION ARM UNIT	1
38	LSMB0221	CASSETTE DOOR SPRING	4 MKA
41	VXPS0389	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2

Ref. No.	Part No.	Part Name & Description	Remarks
43	LSDG0114	CHANGING GEAR	2
44	VXLS1091	IDLER ARM UNIT	2
45	VXPS0391	CAPSTAN ROTOR UNIT	2
46	LSMA0387	STOPPER ANGLE	2
47	LSMM0002	MAIN ROD	2
48	LXQVB01270F	PICTURE TUBE UNIT	MKA
49	VXLS1099	S LOADING ARM UNIT	2
50	VXLS1098	T LOADING ARM UNIT	2
51	LSDG0116	REEL GEAR	2
52	LSDG0111	INTERMEDIATE GEAR B	2
53	LSMA0423	SUPPORT ANGLE	2
54	LSDV0007	CAPSTAN BELT SQUARE,RUBBER 2MM	2
57	LSSA0003	GROUNDING PLATE UNIT	1
60	VMFS0311	CUSHION	5
61	VXYS1347	CASSETTE UP ASS'Y	3,5
62	LSMA0352	TOP PLATE	3
64	LSMD0174	SIDE PLATE L	3
65	LSMD0173	SIDE PLATE R	3
66	LSMB0218	SUPPORT SPRING	3
67	LSML0096	OPENER LEVER	3
68	VXLS1111	DRIVE RACK UNIT	3
69	VXAS4423	HOLDER UNIT	3
70	VXLS1110	WIPER ARM UNIT	3
71	LXQKY01270FK	FRONT CABINET ASS'Y	4 MKA
72	LXQKF01270F	VHS CASSETTE DOOR-LID UNIT	4 MKA
73	LXQKV01270FK	REAR COVER UNIT	4 MKA
84	LSGU0162	OPERATION BUTTON A	4 MKA
90	TBM173052	BADGE,ABS RESIN	4
91	LXQUS01270FK	TOP SHIELD PLATE ASS'Y	5 MKA
92	LXQAS01270F	SPEAKER UNIT R	4 MKA
93	LXQAS02270F	SPEAKER UNIT L	4 MKA
96	TMM7464-1	CLAMPER	5,6,7
100	VKFS2235	BATTERY COVER	5
102	LSMP0249	FRAME	5 MKA
104	LML69002A	CLAMPER	5 MKA
106	LSKH0053	HANDLE	4 MKA
118	LPE64005A	BAG,POLYETHYLENE	8 MKA
121	LSPG0984	PACKING CASE,PAPER	8 MKA
122	LSQF0306	FAN BAG	8 MKA
123	LSSQ0245	INFRARED REMOTE CONTROL UNIT	8 MKA
125	LSPN0177	TOP CUSHION RIGHT,STYROFOAM	8 MKA
126	LSPN0176	TOP CUSHION LEFT,STYROFOAM	8 MKA
127	TMM6463-1	PURSE LOCK CLAMPER	4
131	LSPN0174	BOTTOM CUSHION FRONT,STYROFOAM	8 MKA
132	LSPN0175	BOTTOM CUSHION REAR,STYROFOAM	8 MKA
154	TMM5439-1	CLAMPER	5,7
168	VZFS0006	CLAMPER	5
200	LSGL0341	PANEL LIGHT	4 MKA
201	LSGU0163	OPERATION BUTTON B	4 MKA
202	LXQKF02270F	DVD CASSETTE DOOR-LID UNIT	4 MKA

Ref. No.	Part No.	Part Name & Description	Remarks
203	LSMB0170	DVD CASSETTE DOOR SPRING	4 MKA
204	LSMA0438	MOUNT PLATE,STEEL	5 MKA
208	TMK77708	CUSHION,RUBBER	4 MKA
209	VMFS0213	SHEET,NYLON+RAYON	4 MKA
215	LSQL0837	DOLBY DIGITAL CAUTION LABEL	4 MKA
230	LSKF0325	TRAY COVER	5 MKA
242	VXYS1403	DVD UNIT	5 MKA
244	TUX77809	CLAMPER	7 MKA
247	LSQL0840	CAUTION LABEL	5
261	VEKS5764	CONNECTOR CABLE W/PLUG,DC 12V	5 MKA
262	VEKS5765	CONNECTOR CABLE W/PLUG,DC 12V	5 MKA
263	VEKS5799	CONNECTOR CABLE W/PLUG,DC 12V	5 MKA
264	VEKS5768	CONNECTOR CABLE W/PLUG,DC 14V	5 MKA
265	VEKS5797	CONNECTOR CABLE W/PLUG,0V	5 MKA
266	VEKS5811	GROUNDING WIRE	5 MKA
268	LSMT0062	CUSHION,RUBBER (early product)	5 MKA
401	VHDS0475	SCREW,STEEL	1
405	VHDS0496	SCREW W/WASHER,STEEL	5
410	VHDS0498	SCREW W/WASHER,STEEL	1
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	2
422	XWGV2D5G	WASHER,NYLON	2
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
430	XTV26+6FFZJ	TAPPING SCREW,STEEL	1
432	XTV3+8JR	TAPPING SCREW,STEEL	5,7
443	XTV4+12A	TAPPING SCREW,STEEL	4,7
445	LHT60001Y	SCREW W/WASHER,STEEL	4 MKA
446	XTV4+16A	TAPPING SCREW,STEEL	4 MKA
449	VHDS0493	TAPPING SCREW,STEEL	5
450	VHDS0309	SCREW,STEEL	5
460	XTN4+12A	TAPPING SCREW,STEEL	5
469	XSN3+6	SCREW,STEEL	5
470	XTV3+10G	TAPPING SCREW,STEEL	4
471	XSN26+5	SCREW,STEEL	1
472	XTN26+5FJ	TAPPING SCREW,STEEL	2
473	XYN26+C6	SCREW W/WASHER,STEEL	2
474	LSHD0056	TAPPING SCREW,STEEL	1
475	XTV26+5FJ	TAPPING SCREW,STEEL	2
481	XTW4+Z15D	TAPPING SCREW,STEEL	4 MKA
482	XNG3	NUT,STEEL	6
483	XYN3+F10S	SCREW W/WASHER,STEEL	6,7
484	XTW3+10J	TAPPING SCREW,STEEL	7
485	XYE3+EJ10	SCREW W/WASHER,STEEL	7
486	XYN3+F12S	SCREW W/WASHER,STEEL	7
487	XYN3+J8	SCREW W/WASHER,STEEL	7
488	XYN3+F6S	SCREW W/WASHER,STEEL	7
489	XYN3+F8S	SCREW W/WASHER,STEEL	7
490	XQN2+B35	SCREW,STEEL	2
491	XYN2+J7	SCREW W/WASHER,STEEL	2
492	VHDS0274	TAPPING SCREW,STEEL	5
711	PNA4611M00HC	INFRARED RECEIVER UNIT	6 MKA

Ref. No.	Part No.	Part Name & Description	Remarks
712	VMTS0035	CUSHION,RUBBER	6
713	VMAS1912	P.C.B. SUPPORT ANGLE	6,7
714	VMTS0059	CUSHION,RUBBER	6,7
731(IC2505)	EZMPS300F12	MR HEAD	2
732(P2502)	LSJS0097	CONNECOR 12P	2
733	LSMA0384	BACK PLATE,STEEL	2
741	LSJA0349-FE	AC CORD W/PLUG,125V	6 ⚠ MKA
742	TJC6319	FUSE HOLDER	6
743	ENG36707G	TUNER 1,UHF/VHF NR	6 MKA
744	ENG36708G	TUNER 2,UHF/VHF NR	6 MKA
745	VEKS5774	CONNECTOR CABLE W/PLUG,DC 5V	6 MKA
751	LML69001A	ANODE LEAD CLAMPER	7 MKA
752	LSMA0444	HEAT SINK	7 MKA
753	LSSC0256	HEAT SINK	7 MKA
754	LSSC0438	HEAT SINK	7 MKA
755	TMM16480-1	CLAMPER	7
757	LSSC0410	HEAT SINK	7 MKA
761	TUC15717	HEAT SINK	7 MKA
762	TUC76649-4	HEAT SINK	7
763	LXPJS01F2700	CONNECTOR CABLE W/PLUG,DC 10KV	7 MKA
764	LXPJS02F2700	CONNECTOR CABLE W/PLUG,DC 1.2KV	7 MKA
771	EYF52BC	FUSE HOLDER	6
772	LSSC0408	HEAT SINK	6 MKA
773	VSCS1072	HEAT SINK	6 MKA
791	VEKS5773	CONNECTOR CABLE W/PLUG,DC 5V	5
792	VEKS5812	CONNECTOR CABLE W/PLUG,0V	5
E10	VEPS3091A	MAIN C.B.A.	5,6 RTL MKA
E11	VEPS3090A	TV PROCESS C.B.A.	6 RTL MKA
E12	VEPS4036A	AUDIO C.B.A.	6 RTL MKA
E20	VEPS5035Z	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	1 RTL MKA
E30	VEMS0331	CAPSTAN STATOR C.B.A. NR	2
E40	VEPS9005A	TUNER MAIN C.B.A.	5,6 RTL MKA
E50	LRP61013A	TV MAIN C.B.A.	5,7 RTL MKA
E51	LRP63020A	DEFLECTION C.B.A.	7 RTL MKA
E60	LRP63021A	CRT C.B.A.	5,7 RTL MKA
E70	VEPS1020A	POWER SUPPLY C.B.A.	5,6 RTL MKA
E80	VEPS8060A	OPERATION C.B.A.	5 RTL MKA
E90	LSEP3025A	DVD DECODER C.B.A.	5

12.2.2. SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK1301	SILICON GREASE	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	DVDT-S01	DVD TEST DISC	
	--------	FIRMWARE DISC FOR DVD	(NOT SUPPLIED)
	--------	CONNECTOR CABLE(IDE CABLE)	(NOT SUPPLIED)
	LSUA0031	EXTENSION CABLE	

12.3. ELECTRICAL REPLACEMENT PARTS LIST

12.3.1. PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	VEPS3091A	MAIN C.B.A.	E.S.D. RTL MKA
E11	VEPS3090A	TV PROCESS C.B.A.	E.S.D. RTL MKA
E12	VEPS4036A	AUDIO C.B.A.	E.S.D. RTL MKA
E20	VEPS5035Z	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	RTL MKA
E30	VEMS0331	CAPSTAN STATOR C.B.A. NR	
E40	VEPS9005A	TUNER MAIN C.B.A.	RTL MKA
E50	LRP61013A	TV MAIN C.B.A.	E.S.D. RTL MKA
E51	LRP63020A	DEFLECTION C.B.A.	RTL MKA
E60	LRP63021A	CRT C.B.A.	RTL MKA
E70	VEPS1020A	POWER SUPPLY C.B.A.	E.S.D. RTL MKA
E80	VEPS8060A	OPERATION C.B.A.	RTL MKA
E90	LSEP3025A	DVD DECODER C.B.A.	E.S.D.

12.3.2. MAIN C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1201	BA09T	IC, LINEAR	MKA
IC2601	AN3808K	IC, LINEAR	
IC3001	AN3479FBP-A	IC, LINEAR	
IC3101	NJM2235M-TE1	IC, LINEAR	
IC3201	MN3885S	IC, CCD	E.S.D.
IC3202	TA8898AN	IC, LINEAR	
IC3301	LC8632165S53	IC, 8BIT MICROCONTROLLER	E.S.D. MKA
IC6001	MN101D02HDB	IC, 8BIT MICROCONTROLLER	E.S.D. MKA
IC6002	SG-PK01	REEL SENSOR	
IC6003	SG-PK01	REEL SENSOR	
IC6004	AT24C02A10PI	IC, 2K EEP ROM	E.S.D. MKA
	OR KS24C021I	IC, 2K EEP ROM	E.S.D. MKA
	OR M24C02-BN6	IC, 2K EEP ROM	E.S.D. MKA
IC6005	M51957AL	IC, LINEAR	MKA
IC6501	D750066-330	IC, CMOS STANDARD LOGIC	E.S.D.
IC6601	TC74VHCT126F	IC, CMOS STANDARD LOGIC	E.S.D. MKA
IC7201	NJM2235M-TE1	IC, LINEAR	
IC7211	NJM2235M-TE1	IC, LINEAR	
IC7221	NJM2235M-TE1	IC, LINEAR	
IC7231	NJM2234M-TE1	IC, LINEAR	MKA
IC7241	NJM2235M-TE1	IC, LINEAR	
IC7251	NJM2235M-TE1	IC, LINEAR	
IC7261	NJM2235M-TE1	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q3001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q3002	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3071	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3202	DTC114EK	CHIP	
	OR UN2211	CHIP	
Q3203	DTC114EK	CHIP	
	OR UN2211	CHIP	
Q3310	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3311	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q3316	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3601	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3602	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3603	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q3604	2SC2412K1	CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
	OR 2SD601A	CHIP	
Q4001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q4002	2SD601(R,S)	CHIP	
Q4003	2SD601(R,S)	CHIP	
Q4101	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q4171	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q4173	DTC144EK	CHIP	
	OR UN2213	CHIP	
Q6001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q6002	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q6003	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q6004	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q6005	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q6006	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q6009	VEKS5707	PHOTO SENSOR UNIT	
Q6010	VEKS5707	PHOTO SENSOR UNIT	
Q7231	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D3201	MA165		
	OR 1SS119		
	OR 1SS133T		
D3202	MA165		
	OR 1SS119		
	OR 1SS133T		
D4171	MA165		
	OR 1SS119		
	OR 1SS133T		
D6001	VEKS5708	SENSOR LED UNIT	
D6003	MA165		
	OR 1SS119		
	OR 1SS133T		
D6011	MA165		
	OR 1SS119		
	OR 1SS133T		
D6301	SLP913C81HAB	LED RED	
D6302	SLP913C81HAB	LED RED	
D6303	SLP313C81HAB	LED GREEN	
D6304	SLP413C81HAB	LED ORANGE	MKA

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1201	ERX2SJ6R8P	METAL OXIDE 2W 6.8	MKA
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3001	ERDS2TJ101	100	
R3006	ERDS2TJ101	100	
R3010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3024	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYG102V	MGF CHIP 1/10W 1K	
R3037	ERJ6GEYG102V	MGF CHIP 1/10W 1K	
R3038	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3048	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3071	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3072	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3073	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	

Ref. No.	Part No.	Part Name & Description	Remarks
R3081	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3082	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3083	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R3084	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3085	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3101	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3102	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3204	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3205	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3207	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R3208	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R3209	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3210	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3212	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R3301	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3306	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R3309	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3310	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3311	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3312	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3313	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3319	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3322	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3329	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3332	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3338	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3339	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3340	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3341	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3343	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3344	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3345	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3352	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3361	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3362	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3363	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3365	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3366	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3367	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3369	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R3370	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3375	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3391	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3392	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3393	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3394	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3395	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3396	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3397	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R3398	ERJ6GEYJ331V	MGF CHIP 1/10W 330	

Ref. No.	Part No.	Part Name & Description	Remarks
R3601	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3602	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3603	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3604	ERJ6GEYG271V	MGF CHIP 1/10W 270	
R3605	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3606	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3607	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3608	ERJ6GEYG271V	MGF CHIP 1/10W 270	
R3609	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R3610	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3611	ERJ6GEYG331V	MGF CHIP 1/10W 330	
R3612	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3613	ERJ6GEYG101V	MGF CHIP 1/10W 100	MKA
R3614	ERJ6GEYG562V	MGF CHIP 1/10W 5.6K	
R3615	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4031	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4032	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4051	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4052	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4101	ERDS2TJ563	56K	
R4102	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4171	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4172	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4173	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4174	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4175	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6001	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6002	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6006	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6008	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6013	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6014	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6015	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6016	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6017	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6018	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6020	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6023	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6024	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6025	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6027	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6029	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6031	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6032	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6042	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6043	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6044	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6046	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6047	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6048	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6049	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6050	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6052	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6053	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6054	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6055	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6056	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6060	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6061	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6062	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6064	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6066	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6079	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6084	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6085	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6089	ERDS2TJ103	10K	
R6090	ERDS2TJ103	10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6091	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6092	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6093	ERDS2TJ221	220	
R6094	ERDS2TJ221	220	
R6098	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6099	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6100	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6101	ERDS2TJ121	120	
R6102	ERDS2TJ151	150	
R6103	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6104	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6105	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6106	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6107	ERDS2TJ681	680	
R6108	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6110	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6111	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6112	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6113	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6114	ERDS2TJ221	220	
R6115	ERDS2TJ221	220	
R6116	ERJ6GEYF433V	MGF CHIP 1/10W 43K	MKA
R6117	ERJ6GEYF153V	MGF CHIP 1/10W 15K	
R6118	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6119	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6120	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6121	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6122	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R6123	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6124	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6125	ERDS2TJ560	56	
R6126	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6127	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6128	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6129	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6130	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6131	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6135	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6136	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6139	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6142	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6143	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6146	ERJ6GEYF125V	MGF CHIP 1/10W 1.2M	MKA
R6151	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6152	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6153	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6154	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6155	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6162	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6163	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6164	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6168	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6201	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6203	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R6206	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6208	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6209	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6210	ERDS2TJ272	2.7K	
R6301	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6304	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6305	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6306	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6307	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6308	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6309	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R6314	ERDS2T0	0	
R6503	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6506	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6507	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6508	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6509	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6511	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6512	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6513	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6514	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6515	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6516	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6517	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6518	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6522	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6523	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6524	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6525	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6526	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6527	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6528	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6529	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6530	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6531	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6532	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6533	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6534	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6535	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6536	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6537	ERJ6GEYJ101V	MGF CHIP 1/10W 100	

Ref. No.	Part No.	Part Name & Description	Remarks
R6538	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6539	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6540	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6541	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6550	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6552	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6553	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6554	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6555	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6556	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6557	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6559	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6560	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6591	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6592	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6593	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6594	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6595	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6601	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6602	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6603	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6605	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6607	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R6608	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R7202	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7204	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7205	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7206	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7208	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7209	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7212	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7213	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7214	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7216	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7217	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7219	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7222	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7223	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7224	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7226	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7227	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7231	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7232	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7233	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7234	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7235	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7236	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7237	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R7238	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R7239	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	

Ref. No.	Part No.	Part Name & Description	Remarks
R7242	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7243	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7244	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7246	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7247	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7249	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7252	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7254	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7255	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7256	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7258	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7259	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7262	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7263	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R7264	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R7266	ERJ6GEYJ101V	MGF CHIP 1/10W 100	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1201	ECEA1CKA101	ELECTROLYTIC 16V 100	
C1202	ECUV1E104KBN	C CHIP 25V 0.1	
C1203	ECEA1CKA101	ELECTROLYTIC 16V 100	
C2601	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2602	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2603	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1H104ZFN	C CHIP 50V 0.1	
C2609	ECUV1H104ZFN	C CHIP 50V 0.1	
C2611	ECUV1H103KBN	C CHIP 50V 0.01	
C2612	ECUV1H104ZFN	C CHIP 50V 0.1	
C3001	ECUV1H102KBN	C CHIP 50V 1000P	
C3003	ECUV1E104ZFN	C CHIP 25V 0.1	
C3004	ECUV1H103ZFN	C CHIP 50V 0.01	
C3006	ECUV1E104ZFN	C CHIP 25V 0.1	
C3007	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3008	ECUV1H181JCN	C CHIP 50V 180P	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3010	ECUV1H103ZFN	C CHIP 50V 0.01	
C3013	ECUV1C224ZFN	C CHIP 16V 0.22	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3016	ECEA1CKS100	ELECTROLYTIC 16V 10	
C3018	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3022	ECUV1C224ZFN	C CHIP 16V 0.22	

Ref. No.	Part No.	Part Name & Description	Remarks
C3023	ECUV1H680JCN	C CHIP 50V 68P	
C3024	ECUV1E104ZFN	C CHIP 25V 0.1	
C3025	ECUV1C104KBN	C CHIP 16V 0.1	
C3026	ECUV1H822KBN	C CHIP 50V 8200P	
C3027	ECUV1H103ZFN	C CHIP 50V 0.01	
C3030	ECUV1H103ZFN	C CHIP 50V 0.01	
C3031	ECUV1E104ZFN	C CHIP 25V 0.1	
C3032	ECUV1C474ZFN	C CHIP 16V 0.47	
C3034	ECUV1H181JCN	C CHIP 50V 180P	
C3035	ECUV1H330JCN	C CHIP 50V 33P	
C3036	ECUV1E104ZFN	C CHIP 25V 0.1	
C3037	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3041	ECUV1H103ZFN	C CHIP 50V 0.01	
C3043	ECUV1H392KBN	C CHIP 50V 3900P	
C3044	ECUV1H103ZFN	C CHIP 50V 0.01	
C3045	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3046	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3047	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3048	ECUV1E104ZFN	C CHIP 25V 0.1	
C3049	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3050	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1E104ZFN	C CHIP 25V 0.1	
C3056	ECUV1E104ZFN	C CHIP 25V 0.1	
C3057	ECUV1E104ZFN	C CHIP 25V 0.1	
C3058	ECUV1H103ZFN	C CHIP 50V 0.01	
C3081	ECUV1H103ZFN	C CHIP 50V 0.01	
C3082	ECUV1H332KBN	C CHIP 50V 3300P	
C3101	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3102	ECUV1H103ZFN	C CHIP 50V 0.01	
C3103	ECUV1H103ZFN	C CHIP 50V 0.01	
C3104	ECUV1H220JCN	C CHIP 50V 22P	
C3105	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3106	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3202	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3203	ECUV1H103ZFN	C CHIP 50V 0.01	
C3204	ECUV1H103ZFN	C CHIP 50V 0.01	
C3205	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3206	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3207	ECUV1E104ZFN	C CHIP 25V 0.1	
C3208	ECUV1H103ZFN	C CHIP 50V 0.01	
C3209	ECUV1H103ZFN	C CHIP 50V 0.01	
C3210	ECUV1H103ZFN	C CHIP 50V 0.01	
C3211	ECUV1E104ZFN	C CHIP 25V 0.1	
C3212	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3213	ECUV1H103ZFN	C CHIP 50V 0.01	
C3214	ECUV1H103ZFN	C CHIP 50V 0.01	
C3215	ECUV1H103ZFN	C CHIP 50V 0.01	
C3216	ECUV1H472KBN	C CHIP 50V 4700P	
C3217	ECUV1H103ZFN	C CHIP 50V 0.01	

Ref. No.	Part No.	Part Name & Description	Remarks
C3218	ECUV1H103ZFN	C CHIP 50V 0.01	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3232	ECUV1H102KBN	C CHIP 50V 1000P	
C3234	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3235	ECUV1H103ZFN	C CHIP 50V 0.01	
C3236	ECUV1E104ZFN	C CHIP 25V 0.1	
C3237	ECUV1H103ZFN	C CHIP 50V 0.01	
C3301	ECUV1H220JCN	C CHIP 50V 22P	
C3302	ECUV1H180JCN	C CHIP 50V 18P	
C3303	ECUV1E104ZFN	C CHIP 25V 0.1	
C3304	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3308	ECUV1H103ZFN	C CHIP 50V 0.01	
C3309	ECEA1HKS010	ELECTROLYTIC 50V 1	
C3310	ECUV1H103ZFN	C CHIP 50V 0.01	
C3311	ECUV1H333KBN	C CHIP 50V 0.033	
C3312	ECUV1H102KBN	C CHIP 50V 1000P	
C3313	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3314	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3365	ECUV1H391JCN	C CHIP 50V 390P	
C3374	ECUV1H120JCN	C CHIP 50V 12P	
C3375	ECUV1E104ZFN	C CHIP 25V 0.1	
C3601	ECEA1CKN220	ELECTROLYTIC 16V 22	MKA
C3602	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3603	ECUV1H103ZFN	C CHIP 50V 0.01	
C3604	ECUV1H103ZFN	C CHIP 50V 0.01	
C3605	ECEA1CKA220	ELECTROLYTIC 16V 22	
C3606	ECEA1CKA101	ELECTROLYTIC 16V 100	
C3607	ECUV1H103ZFN	C CHIP 50V 0.01	
C4001	ECUV1C224ZFN	C CHIP 16V 0.22	
C4002	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E333KBN	C CHIP 25V 0.033	
C4011	ECUV1H103KBN	C CHIP 50V 0.01	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4051	ECUV1E333KBN	C CHIP 25V 0.033	
C4102	ECQB1562JF	POLYESTER 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6001	ECEA1CKA470	ELECTROLYTIC 16V 47	
C6003	ECEA0JKA221	ELECTROLYTIC 6.3V 220	

Ref. No.	Part No.	Part Name & Description	Remarks
C6005	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6006	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C6007	ECEA0JKS101	ELECTROLYTIC 6.3V 100	
C6008	ECUV1H104ZFN	C CHIP 50V 0.1	
C6010	ECEA1CKS100	ELECTROLYTIC 16V 10	
C6011	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6012	ECUV1H104ZFN	C CHIP 50V 0.1	
C6014	ECUV1H104ZFN	C CHIP 50V 0.1	
C6018	ECUV1H150JCN	C CHIP 50V 15P	
C6019	ECUV1H100CCN	C CHIP 50V 10P	
C6020	ECUV1E104KBN	C CHIP 25V 0.1	
C6021	ECUV1H560JCN	C CHIP 50V 56P	
C6022	ECUV1H101JCN	C CHIP 50V 100P	
C6023	ECUV1H101JCN	C CHIP 50V 100P	
C6025	ECUV1H101JCN	C CHIP 50V 100P	
C6028	ECUV1E104KBN	C CHIP 25V 0.1	
C6029	ECUV1H102KBN	C CHIP 50V 1000P	
C6030	ECUV1H102KBN	C CHIP 50V 1000P	
C6034	ECUV1H102KBN	C CHIP 50V 1000P	
C6040	ECUV1H104ZFN	C CHIP 50V 0.1	
C6041	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6042	ECUV1H103ZFN	C CHIP 50V 0.01	
C6044	ECKW1H103KB5	CERAMIC 50V 0.01	
C6045	ECKW1H222KB5	CERAMIC 50V 2200P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6204	ECUV1H102KBN	C CHIP 50V 1000P	
C6205	ECUV1H820JCN	C CHIP 50V 82P	
C6207	ECUV1E104KBN	C CHIP 25V 0.1	
C6208	ECEA1CKS100	ELECTROLYTIC 16V 10	
C6209	ECUV1H332KBN	C CHIP 50V 3300P	
C6211	ECUV1E104KBN	C CHIP 25V 0.1	
C6212	ECUV1E104KBN	C CHIP 25V 0.1	
C6213	ECEA0JKS101	ELECTROLYTIC 6.3V 100	
C6214	ECUV1H272KBN	C CHIP 50V 2700P	
C6215	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C6217	ECUV1H103KBN	C CHIP 50V 0.01	
C6302	ECUV1H104ZFN	C CHIP 50V 0.1	
C6502	ECUV1H103ZFN	C CHIP 50V 0.01	
C6503	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6504	ECUV1H104ZFN	C CHIP 50V 0.1	
C6506	ECUV1H101JCN	C CHIP 50V 100P	
C6507	ECUV1H101JCN	C CHIP 50V 100P	
C6601	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6602	ECUV1E104ZFN	C CHIP 25V 0.1	
C6603	ECUV1H560JCN	C CHIP 50V 56P	
C6604	ECUV1H560JCN	C CHIP 50V 56P	
C7201	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7202	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7203	ECEA1CKN100	ELECTROLYTIC 16V 10	
C7204	ECUV1H220JCN	C CHIP 50V 22P	

Ref. No.	Part No.	Part Name & Description	Remarks
C7205	ECUV1H103ZFN	C CHIP 50V 0.01	
C7211	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7212	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7213	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7214	ECUV1H220JCN	C CHIP 50V 22P	
C7215	ECUV1H103ZFN	C CHIP 50V 0.01	
C7221	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7222	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7223	ECUV1H103ZFN	C CHIP 50V 0.01	
C7224	ECUV1H220JCN	C CHIP 50V 22P	
C7225	ECUV1H103ZFN	C CHIP 50V 0.01	
C7231	ECUV1H103ZFN	C CHIP 50V 0.01	
C7232	ECUV1H103ZFN	C CHIP 50V 0.01	
C7233	ECUV1H103ZFN	C CHIP 50V 0.01	
C7234	ECUV1H220JCN	C CHIP 50V 22P	
C7235	ECUV1H103ZFN	C CHIP 50V 0.01	
C7237	ECUV1H103ZFN	C CHIP 50V 0.01	
C7241	ECEA1CKN100	ELECTROLYTIC 16V 10	
C7242	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7243	ECEA1CKN100	ELECTROLYTIC 16V 10	
C7244	ECUV1H220JCN	C CHIP 50V 22P	
C7245	ECUV1H103ZFN	C CHIP 50V 0.01	
C7251	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7252	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7253	ECEA1CKN100	ELECTROLYTIC 16V 10	
C7254	ECUV1H220JCN	C CHIP 50V 22P	
C7255	ECUV1H103ZFN	C CHIP 50V 0.01	
C7261	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7262	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7263	ECUV1H103ZFN	C CHIP 50V 0.01	
C7264	ECUV1H220JCN	C CHIP 50V 22P	
C7265	ECUV1H103ZFN	C CHIP 50V 0.01	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL4051	VLFS0014		

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3002	VLQSAB7D680K	68	MKA
L3005	VLQSH02R330K	33	
L3010	VLQSAB7D470K	47	MKA
L3020	VLPS0087		MKA
L3101	ELESN101KA	100	
L3201	ELESN101KA	100	
L3202	ELESN101KA	100	
L3203	EXCELDR25V	BEAD INDUCTOR	
L3231	ELESN221KA	220	
L3303	VLPS0111	CHIP BEAD INDUCTOR	MKA
L3304	VLPS0111	CHIP BEAD INDUCTOR	MKA
L3305	VLPS0111	CHIP BEAD INDUCTOR	MKA
L3601	ELESN101KA	100	
L4001	VLQSU06R153K	15M	
L4002	ELESN101KA	100	
L4004	VLQSH02R100K	10	
L4101	ELESN471KA	470	
L6002	ELEXT101KE04	100	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3001	VSXS0195		
X3301	VSXS0238		MKA
X6001	VSXS0205-T	CRYSTAL	
X6501	EF0EC4004T4		

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1201	VJPS0546	CONNECTOR 13P	MKA
P3001	VJPS0885	CONNECTOR 20P	
P4001	VJSS0888	FE CONNECTOR 2P	
P4004	VJSS0874	CONNECTOR 11P	
P4005	VJSS0876	CONNECTOR RECEPTACLE 19P	MKA
P4007	VJSS0876	CONNECTOR RECEPTACLE 19P	MKA
P5312	LSJP0088	CONNECTOR 12P	
P5313	LSJP0088	CONNECTOR 12P	
P5314	LSJP0088	CONNECTOR 12P	
P5502	VJPS0277	CONNECTOR 7P	
P6002	VJSS0874	CONNECTOR 11P	
P6201	LSJP0089	CONNECTOR 12P	
P6202	LSJP0088	CONNECTOR 12P	
P6501	VJSS0876	CONNECTOR RECEPTACLE 19P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	LSSH0002	LEAF SWITCH-SAFETY TAB	
SW6002	LSSS0008	MODE SWITCH	MKA
SW6301	EVQ21405R	PUSH SWITCH	
SW6302	EVQ21405R	PUSH SWITCH	
SW6303	EVQ21405R	PUSH SWITCH	
SW6304	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	
SW6307	EVQ21405R	PUSH SWITCH	
SW6308	EVQ21405R	PUSH SWITCH	
SW6309	EVQ21405R	PUSH SWITCH	
SW6310	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	
SW6312	EVQ21405R	PUSH SWITCH	
SW6313	EVQ21405R	PUSH SWITCH	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T4101	VLTS0367		MKA

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E11	VEPS3090A	TV PROCESS C.B.A.	MKA
E12	VEPS4036A	AUDIO C.B.A.	MKA

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
96	TMM7464-1	CLAMPER	
711	PNA4611M00HC	INFRARED RECEIVER UNIT	MKA
712	VMTS0035	CUSHION,RUBBER	

12.3.3. TV PROCESS C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC5101	MN82840	IC, LOGIC	E.S.D. MKA
IC5201	M65667FP	IC, CMOS STANDARD LOGIC	E.S.D. MKA
IC5202	BA033FP-E2	IC, LINEAR	
IC5203	TC7W08F	IC, CMOS STANDARD LOGIC	E.S.D. MKA
IC5301	AN5308NK	IC, LINEAR	MKA
IC5303	XC62FP5002PR	IC, LINEAR	MKA
IC5401	NJM2904M-TE3	IC, LINEAR	MKA

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q5007	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5008	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5010	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5011	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5012	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5013	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5101	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5104	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5105	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5107	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5108	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5109	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5110	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5114	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5118	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5119	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5122	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5123	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5124	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5125	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5201	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5202	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5203	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5204	2SC2412K1	CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
	OR 2SD601A	CHIP	
Q5205	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5206	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5207	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5208	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5209	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5210	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5214	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5218	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5301	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5302	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5303	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5304	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5305	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5306	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5501	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5551	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5601	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5901	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5902	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5903	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5904	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q5906	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q5907	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D5005	MA111	CHIP	
D5201	MA165		
	OR 1SS119		
	OR 1SS133T		
D5301	MA111	CHIP	
D5501	MA4062-L	ZENER 6.2V	⚠
D5502	MA4039-M	ZENER	
D5503	MA111	CHIP	
D5504	ERA15-01V3		
	OR ERA15-01V5		
D5551	MA4036-M		
D5552	MA111	CHIP	
D5553	MA111	CHIP	
D5901	MA111	CHIP	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R5021	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5023	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5028	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5029	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5030	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5031	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5035	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5036	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5037	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R5038	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5039	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5041	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5042	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5043	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5044	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5045	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5102	ERJ6GEYJ470V	MGF CHIP 1/10W 47	
R5103	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5105	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5106	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5107	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5108	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5112	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R5113	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5117	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5118	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5121	ERJ6GEYJ301V	MGF CHIP 1/10W 300	
R5122	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5124	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5127	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R5128	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	

Ref. No.	Part No.	Part Name & Description	Remarks
R5129	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5130	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5132	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5133	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5134	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5135	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5136	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5137	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5138	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5139	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5140	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5141	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5142	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5143	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R5144	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5145	ERJ6ENF2200V	MGF CHIP 1/10W 220	MKA
R5146	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5147	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5148	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5150	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5152	ERJ6GEYJ680V	MGF CHIP 1/10W 68	
R5153	ERJ6ENF2201V	MGF CHIP 1/10W 2.2K	
R5154	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5158	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5159	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5162	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5169	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R5170	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5171	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R5172	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5173	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5174	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R5178	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5179	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5186	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5187	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R5188	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5189	ERJ6ENF9090V	MGF CHIP 1/10W 909	MKA
R5190	ERJ6ENF5110V	MGF CHIP 1/10W 511	MKA
R5191	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5192	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5193	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5194	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R5195	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5196	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5201	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R5203	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5204	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5205	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5206	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	

Ref. No.	Part No.	Part Name & Description	Remarks
R5207	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5208	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5210	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5211	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5212	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5213	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5214	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5215	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5216	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5217	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5218	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5219	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5220	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5221	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5222	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R5223	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R5224	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R5225	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5226	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5227	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5228	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5229	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5230	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5231	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R5232	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5233	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5234	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5235	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5236	ERJ6GEYJ304V	MGF CHIP 1/10W 300K	
R5237	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5238	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R5239	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5240	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R5241	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5242	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R5243	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R5250	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5251	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R5252	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5266	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5267	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5273	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5274	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5275	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R5276	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R5277	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5278	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5283	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5284	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5301	ERJ6GEYJ331V	MGF CHIP 1/10W 330	

Ref. No.	Part No.	Part Name & Description	Remarks
R5302	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5303	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5304	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5305	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5306	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5307	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R5310	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5311	ERJ6ENF2701V	MGF CHIP 1/10W 2.7K	
R5312	ERJ6ENF5601V	MGF CHIP 1/10W 5.6K	MKA
R5313	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5314	ERJ6ENF5601V	MGF CHIP 1/10W 5.6K	MKA
R5315	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5316	ERJ6ENF5232V	MGF CHIP 1/10W 52.3K	MKA
R5317	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5318	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R5319	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R5320	ERJ6GEYJ753V	MGF CHIP 1/10W 75K	MKA
R5321	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5322	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5323	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R5324	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5325	ERJ6ENF3010V	MGF CHIP 1/10W 301	MKA
R5326	ERJ6ENF1500V	MGF CHIP 1/10W 150	
R5327	ERJ6ENF1500V	MGF CHIP 1/10W 150	
R5328	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5329	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5330	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5401	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5402	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5407	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R5408	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5409	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R5415	ERJ6ENF1822	MGF CHIP 1/10W 18.2K	MKA
R5416	ERJ6ENF1502	MGF CHIP 1/10W 15K	MKA
R5417	ERJ6ENF3901	MGF CHIP 1/10W 3.9K	MKA
R5418	ERJ6ENF6800	MGF CHIP 1/10W 680	MKA
R5419	ERJ6GEYJ470V	MGF CHIP 1/10W 47	
R5420	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5421	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5422	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5423	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R5424	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R5503	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5504	ERJ6ENF3241V	MGF CHIP 1/10W 3.24K	⚠
R5505	ERDS2TJ561	560	
R5506	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5507	ERDS2TJ271	270	
R5508	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	

Ref. No.	Part No.	Part Name & Description	Remarks
R5509	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5510	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R5513	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5514	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5515	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5551	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5553	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5554	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5601	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5602	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5603	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R5604	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5605	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R5606	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5607	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5608	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5609	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5611	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R5612	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5613	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R5701	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5702	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5703	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5704	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R5705	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5838	ERG2SJ560E	METAL OXIDE 2W 56	MKA
R5901	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5902	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5907	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5908	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5909	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5910	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R5911	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5912	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5913	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5914	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5915	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5916	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5921	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5922	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5924	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R5925	ERJ6GEYJ362V	MGF CHIP 1/10W 3.6K	MKA

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C5007	ECUV1H103ZFN	C CHIP 50V 0.01	Z
C5016	ECUV1H103ZFN	C CHIP 50V 0.01	
C5017	ECUV1E104ZFN	C CHIP 25V 0.1	
C5101	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5103	ECUV1H103ZFN	C CHIP 50V 0.01	
C5104	ECUV1H220JCN	C CHIP 50V 22P	
C5106	ECUV1H101JCN	C CHIP 50V 100P	
C5109	ECUV1H121JCN	C CHIP 50V 120P	
C5110	ECUV1H150JCN	C CHIP 50V 15P	
C5111	ECUV1H181JCN	C CHIP 50V 180P	
C5112	ECUV1H103ZFN	C CHIP 50V 0.01	
C5113	ECUV1H680JCN	C CHIP 50V 68P	
C5114	ECUV1H103ZFN	C CHIP 50V 0.01	
C5115	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C5116	ECUV1H103ZFN	C CHIP 50V 0.01	
C5117	ECUV1H103ZFN	C CHIP 50V 0.01	
C5118	ECUV1H103ZFN	C CHIP 50V 0.01	
C5119	ECUV1H270JCN	C CHIP 50V 27P	
C5120	ECUV1H270JCN	C CHIP 50V 27P	
C5121	ECUV1H470JCN	C CHIP 50V 47P	
C5122	ECEA1EKA100	ELECTROLYTIC 25V 10	
C5123	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5124	ECUV1H221JCN	C CHIP 50V 220P	
C5125	ECUV1H103ZFN	C CHIP 50V 0.01	
C5126	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5127	ECUV1H103ZFN	C CHIP 50V 0.01	
C5129	ECUV1H103ZFN	C CHIP 50V 0.01	
C5130	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C5131	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5132	ECEA1HKN010	ELECTROLYTIC 50V 1	
C5133	ECUV1H103ZFN	C CHIP 50V 0.01	
C5136	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5138	ECUV1H103ZFN	C CHIP 50V 0.01	
C5140	ECUV1H150JCN	C CHIP 50V 15P	
C5141	ECUV1H680JCN	C CHIP 50V 68P	
C5142	ECUV1H121JCN	C CHIP 50V 120P	
C5143	ECUV1H181JCN	C CHIP 50V 180P	
C5144	ECUV1H103ZFN	C CHIP 50V 0.01	
C5201	ECUV1E104ZFN	C CHIP 25V 0.1	
C5202	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5203	ECUV1E104ZFN	C CHIP 25V 0.1	
C5204	ECUV1H103ZFN	C CHIP 50V 0.01	
C5205	ECUV1H103ZFN	C CHIP 50V 0.01	
C5206	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5207	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5208	ECUV1E104ZFN	C CHIP 25V 0.1	
C5209	ECUV1H103ZFN	C CHIP 50V 0.01	
C5210	ECUV1H103ZFN	C CHIP 50V 0.01	
C5211	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5212	ECUV1E104ZFN	C CHIP 25V 0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C5213	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5214	ECUV1E104ZFN	C CHIP 25V 0.1	
C5215	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5217	ECUV1H151JCN	C CHIP 50V 150P	
C5218	ECUV1H681JCN	C CHIP 50V 680P	
C5219	ECUV1E104ZFN	C CHIP 25V 0.1	
C5220	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5221	ECUV1H103ZFN	C CHIP 50V 0.01	
C5222	ECUV1H103ZFN	C CHIP 50V 0.01	
C5223	ECUV1H151JCN	C CHIP 50V 150P	
C5224	ECUV1E104ZFN	C CHIP 25V 0.1	
C5225	ECUV1E104ZFN	C CHIP 25V 0.1	
C5226	ECUV1H680JCN	C CHIP 50V 68P	
C5227	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5228	ECUV1E104ZFN	C CHIP 25V 0.1	
C5230	ECEA1HKN010	ELECTROLYTIC 50V 1	
C5231	ECUV1E104ZFN	C CHIP 25V 0.1	
C5232	ECUV1E393KBN	C CHIP 25V 0.039	
C5233	ECUV1H103KBN	C CHIP 50V 0.01	
C5234	ECUV1H103KBN	C CHIP 50V 0.01	
C5235	VCUSTBC224KB	C CHIP 16V 0.22	
C5236	ECUV1H680JCN	C CHIP 50V 68P	
C5237	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5238	ECUV1E104ZFN	C CHIP 25V 0.1	
C5240	ECUV1H270JCN	C CHIP 50V 27P	
C5241	ECUV1H152KBN	C CHIP 50V 1500P	
C5242	ECEA1HKSR47	ELECTROLYTIC 50V 0.47	
C5243	ECUV1E104ZFN	C CHIP 25V 0.1	
C5244	ECUV1E104ZFN	C CHIP 25V 0.1	
C5245	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5246	ECUV1E104ZFN	C CHIP 25V 0.1	
C5249	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C5250	ECUV1E104ZFN	C CHIP 25V 0.1	
C5252	ECUV1E104ZFN	C CHIP 25V 0.1	
C5253	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5254	ECUV1E104ZFN	C CHIP 25V 0.1	
C5255	ECEA1CKA220	ELECTROLYTIC 16V 22	
C5256	ECUV1H391JCN	C CHIP 50V 390P	
C5257	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
C5258	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5260	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5261	ECUV1E104ZFN	C CHIP 25V 0.1	
C5262	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C5263	ECUV1E104ZFN	C CHIP 25V 0.1	
C5264	ECUV1E104ZFN	C CHIP 25V 0.1	
C5265	ECUV1E104ZFN	C CHIP 25V 0.1	
C5266	ECUV1E104ZFN	C CHIP 25V 0.1	
C5267	ECUV1E104ZFN	C CHIP 25V 0.1	
C5268	ECUV1E104ZFN	C CHIP 25V 0.1	
C5269	ECUV1H101JCN	C CHIP 50V 100P	

Ref. No.	Part No.	Part Name & Description	Remarks
C5270	ECUV1H101JCN	C CHIP 50V 100P	
C5271	ECUV1H220JCN	C CHIP 50V 22P	
C5301	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5302	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5303	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5305	ECEA1HKN010	ELECTROLYTIC 50V 1	
C5306	ECEA1HKN010	ELECTROLYTIC 50V 1	
C5307	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5308	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5309	ECEA1HKA4R7	ELECTROLYTIC 50V 4.7	
C5310	ECEA1CKA220	ELECTROLYTIC 16V 22	
C5311	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5314	ECUV1H103ZFN	C CHIP 50V 0.01	
C5315	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5316	ECEA1CKA220	ELECTROLYTIC 16V 22	
C5317	ECUV1H101JCN	C CHIP 50V 100P	
C5318	ECEA1CKA220	ELECTROLYTIC 16V 22	
C5401	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5403	ECQV1H334JM	POLYESTER 50V 0.33	MKA
C5404	ECEA1CKN220	ELECTROLYTIC 16V 22	MKA
C5406	ECUV1E333KBN	C CHIP 25V 0.033	
C5407	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C5408	ECSF1EE105V	TANTALUM 25V 1	MKA
C5410	ECUV1H102JCN	C CHIP 50V 1000P	
C5411	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5412	ECUV1H103ZFN	C CHIP 50V 0.01	
C5501	ECUV1H221JSN	C CHIP 50V 220P	MKA
C5502	ECUV1E563KBN	C CHIP 25V 0.056	
C5503	ECUV1H103ZFN	C CHIP 50V 0.01	
C5504	ECUV1H103ZFN	C CHIP 50V 0.01	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5506	ECUV1H103ZFN	C CHIP 50V 0.01	
C5507	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C5508	ECUV1E333KBN	C CHIP 25V 0.033	
C5510	ECUV1E683KBN	C CHIP 25V 0.068	
C5511	ECUV1H182KBN	C CHIP 50V 1800P	
C5512	ECA1CM102B	ELECTROLYTIC 16V 1000	
C5601	ECUV1H090CCN	C CHIP 50V 9P	
C5602	ECUV1H103KBN	C CHIP 50V 0.01	
C5603	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5604	ECUV1H103ZFN	C CHIP 50V 0.01	
C5605	ECUV1H151JCN	C CHIP 50V 150P	
C5606	ECUV1H103ZFN	C CHIP 50V 0.01	
C5607	ECUV1E104KBN	C CHIP 25V 0.1	
C5609	ECUV1H103ZFN	C CHIP 50V 0.01	
C5701	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5702	ECUV1H103KBN	C CHIP 50V 0.01	
C5828	ECEA1CKA101	ELECTROLYTIC 16V 100	
C5829	ECUV1H104ZFN	C CHIP 50V 0.1	
C5901	ECA1CM221	ELECTROLYTIC 16V 220	

Ref. No.	Part No.	Part Name & Description	Remarks
C5902	ECUV1H103ZFN	C CHIP 50V 0.01	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5904	ECUV1H103ZFN	C CHIP 50V 0.01	
C5905	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5906	ECUV1H103ZFN	C CHIP 50V 0.01	
C5908	ECUV1E104ZFN	C CHIP 25V 0.1	
C5909	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5914	ECUV1E104ZFN	C CHIP 25V 0.1	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L5101	ELESN150KA	15	
L5102	ELESN330KA	33	
L5103	ELESN1R5KA	1.5	MKA
L5105	ELESN4R7KA	4.7	
L5106	ELESN150KA	15	
L5107	ELESN470KA	47	
L5109	ELESN101KA	100	
L5110	ELESN6R8KA	6.8	MKA
L5111	ELESN150KA	15	
L5112	TSK1002		MKA
L5114	ELESN4R7KA	4.7	
L5115	ELESN6R8KA	6.8	MKA
L5116	ELESN150KA	15	
L5201	ELESN330KA	33	
L5202	ELESN330KA	33	
L5203	ELESN330KA	33	
L5204	ELESN330KA	33	
L5205	ELESN330KA	33	
L5206	ELESN330KA	33	
L5207	ELESN330KA	33	
L5208	ELESN330KA	33	
L5209	ELESN220KA	22	
L5212	ELESN101KA	100	
L5213	ELESN101KA	100	
L5218	EXCELDR25V	BEAD INDUCTOR	
L5219	EXCELDR25V	BEAD INDUCTOR	
L5220	EXCELDR25V	BEAD INDUCTOR	
L5221	ELESN101KA	100	
L5601	VLQSAC3R120J	12	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X5201	LSSX0043		MKA
X5501	EF0A503KS4KT		MKA
X5601	TSSA075		MKA

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P5301	VJPS0285	6P	
P5302	LSJS0096	CONNECTOR 12P	
P5303	LSJS0096	CONNECTOR 12P	
P5304	LSJS0096	CONNECTOR 12P	
P5401	VJPS0291	12P	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
PR5801	LSSF009AR37E	IC PROTECTOR 1.5A	⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
713	VMAS1912	P.C.B. SUPPORT ANGLE	
714	VMTS0059	CUSHION,RUBBER	

12.3.4. AUDIO C.B.A

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC4201	AN3962FB-V	IC, LINEAR	
IC4301	BU4052BCF	IC, CMOS STANDARD LOGIC	E.S.D. MKA
	OR CD4052BCM	IC, CMOS STANDARD LOGIC	E.S.D.
IC4302	UPC4570G	IC, LINEAR	
IC4303	BU4052BCF	IC, CMOS STANDARD LOGIC	E.S.D. MKA
	OR CD4052BCM	IC, CMOS STANDARD LOGIC	E.S.D.
IC4351	BU4053BCF	IC, CMOS STANDARD LOGIC	E.S.D.
	OR CD4053BCM	IC, CMOS STANDARD LOGIC	E.S.D.
IC4352	UPC4570G	IC, LINEAR	
IC9001	CXA2064M	IC, LINEAR	MKA
IC9101	CXA2064M	IC, LINEAR	MKA
IC9201	AN7420-NT	IC, LINEAR	MKA

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q4351	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q4352	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q4353	DTC124EK	CHIP	
	OR UN2212	CHIP	
Q4354	UN211L	CHIP	
Q4355	UN221L	CHIP	
Q9001	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q9002	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q9101	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q9102	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4351	MA165		
	OR 1SS119		
	OR 1SS133T		
D4352	MA4120N-M	12V	MKA
D4353	MA165		
	OR 1SS119		
	OR 1SS133T		
D4354	MA165		
	OR 1SS119		
	OR 1SS133T		
D9001	MA165		
	OR 1SS119		
	OR 1SS133T		
D9101	MA165		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4201	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4202	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4203	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4204	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4205	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4206	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4207	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4208	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4209	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4210	ERA6YEB153V	MGF CHIP 1/10W 15K	
R4211	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4212	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4213	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4214	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4215	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4216	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4217	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4218	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4219	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4220	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4221	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4222	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4223	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4224	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4225	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4226	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4227	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4228	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4229	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4230	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4232	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4301	VLQSH02R101K	100	
R4302	VLQSH02R101K	100	
R4307	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4308	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4309	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4310	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4311	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4312	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4313	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4314	ERDS2TJ333	33K	
R4315	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4316	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4317	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4318	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4319	ERDS2TJ333	33K	
R4320	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4321	ERDS2TJ333	33K	
R4322	ERDS2TJ223	22K	
R4351	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4352	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4353	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4354	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4355	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4356	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4357	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4358	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4359	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4360	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4361	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4362	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4363	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4364	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4365	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4366	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4367	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4368	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4369	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4370	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4371	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R9001	EVNCYAA03B14	VARIABLE 10K	
R9002	ERJ6GEYG683V	MGF CHIP 1/10W 68K	
R9003	EVNDCAA03B14	VARIABLE 10K	
R9004	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R9005	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R9006	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9007	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9008	EVMAASA00B53	VARIABLE 5K	
R9009	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9010	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9017	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R9018	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9101	EVNCYAA03B14	VARIABLE 10K	
R9102	ERJ6GEYG683V	MGF CHIP 1/10W 68K	
R9103	EVNDCAA03B14	VARIABLE 10K	
R9104	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R9105	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R9106	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9107	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9108	EVMAASA00B53	VARIABLE 5K	
R9109	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9110	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9111	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9112	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9113	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R9114	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R9115	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R9116	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	

Ref. No.	Part No.	Part Name & Description	Remarks
R9117	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R9118	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9201	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9202	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9203	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9204	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R9205	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9206	EVMAASA00B53	VARIABLE 5K	
R9207	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9208	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9209	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R9210	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R9211	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R9212	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9213	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4201	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4202	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4203	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4204	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4205	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4206	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4207	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4208	ECUV1E104ZFN	C CHIP 25V 0.1	
C4209	ECUV1E104ZFN	C CHIP 25V 0.1	
C4210	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4211	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4212	ECUV1E473KBN	C CHIP 25V 0.047	
C4213	ECUV1E473KBN	C CHIP 25V 0.047	
C4214	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4215	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4216	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4217	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4218	ECUV1H153KBN	C CHIP 50V 0.015	
C4219	ECUV1H153KBN	C CHIP 50V 0.015	
C4220	ECUV1H103KBN	C CHIP 50V 0.01	
C4221	ECUV1H103KBN	C CHIP 50V 0.01	
C4223	ECUV1H103ZFN	C CHIP 50V 0.01	
C4224	ECUV1C224ZFN	C CHIP 16V 0.22	
C4225	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4226	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4227	ECUV1E104ZFN	C CHIP 25V 0.1	
C4228	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4229	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4230	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4231	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4232	ECEA1HKA010	ELECTROLYTIC 50V 1	

Ref. No.	Part No.	Part Name & Description	Remarks
C4301	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4302	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4303	ECUV1H103ZFN	C CHIP 50V 0.01	
C4304	ECUV1H103ZFN	C CHIP 50V 0.01	
C4305	ECUV1H103ZFN	C CHIP 50V 0.01	
C4306	ECUV1H103ZFN	C CHIP 50V 0.01	
C4307	ECUV1H103ZFN	C CHIP 50V 0.01	
C4308	ECUV1H103ZFN	C CHIP 50V 0.01	
C4351	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4352	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4353	ECUV1H103ZFN	C CHIP 50V 0.01	
C4354	ECUV1H103ZFN	C CHIP 50V 0.01	
C4355	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4356	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4357	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4358	ECUV1H103ZFN	C CHIP 50V 0.01	
C4359	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4360	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4361	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4362	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4363	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9001	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9002	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9003	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9004	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9005	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9006	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9007	ECUV1H562KBN	C CHIP 50V 5600P	
C9008	ECUV1E123KBN	C CHIP 25V 0.012	
C9009	ECEA1EKN4R7	ELECTROLYTIC 25V 4.7	
C9010	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9011	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9012	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9013	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9014	ECEA1EKN4R7	ELECTROLYTIC 25V 4.7	
C9015	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C9016	ECEA1EKN4R7	ELECTROLYTIC 25V 4.7	
C9017	ECUV1E473KBN	C CHIP 25V 0.047	
C9018	ECUV1H272KBN	C CHIP 50V 2700P	
C9019	ECUV1H103ZFN	C CHIP 50V 0.01	
C9020	ECEA1CKA220	ELECTROLYTIC 16V 22	
C9101	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9102	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9103	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9104	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C9105	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9106	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9107	ECUV1H562KBN	C CHIP 50V 5600P	
C9108	ECUV1E123KBN	C CHIP 25V 0.012	
C9109	ECEA1EKN4R7	ELECTROLYTIC 25V 4.7	

Ref. No.	Part No.	Part Name & Description	Remarks
C9110	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9111	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9112	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9113	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9114	ECEA1EKN4R7	ELECTROLYTIC 25V 4.7	
C9115	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C9116	ECEA1EKN4R7	ELECTROLYTIC 25V 4.7	
C9117	ECUV1E473KBN	C CHIP 25V 0.047	
C9118	ECUV1H272KBN	C CHIP 50V 2700P	
C9119	ECUV1H103ZFN	C CHIP 50V 0.01	
C9120	ECEA1CKA220	ELECTROLYTIC 16V 22	
C9201	ECUV1H103ZFN	C CHIP 50V 0.01	
C9202	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9203	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9204	ECQP1H102J	POLYESTER 50V 1000P	
C9205	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9206	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C9207	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9208	ECUV1E223KBN	C CHIP 25V 0.022	
C9209	ECUV1E223KBN	C CHIP 25V 0.022	
C9210	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9211	ECEA1HKA010	ELECTROLYTIC 50V 1	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L9001	ELESN101KA	100	
L9101	ELESN101KA	100	
L9201	ELESN101KA	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4201	VJHS0299	9P	
P4202	VJHS0298	PACK PIN 8P	
P4203	VJHS0298	PACK PIN 8P	
P4204	VJHS0295	PACK PIN 5P	
P4205	VJHS0299	9P	
P4206	VJHS0297	PACK PIN 7P	
P4207	VJHS0299	9P	
P4208	VJHS0297	PACK PIN 7P	
P4209	VJPS0290	11P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
713	VMAS1912	P.C.B. SUPPORT ANGLE	

12.3.5. Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC3501	AN3361SB	IC, LINEAR	
IC4401	AN3328S	IC, LINEAR	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4405	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4406	ERJ6GEYJ180V	MGF CHIP 1/10W 18	
R4407	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4408	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4410	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4411	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C3504	ECUV1H103ZFN	C CHIP 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP 25V 0.1	
C3507	ECUV1H102KBN	C CHIP 50V 1000P	
C3508	ECUV1E104ZFN	C CHIP 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP 25V 0.1	
C3513	ECUV1H104ZFN	C CHIP 50V 0.1	
C3519	ECUV1H104ZFN	C CHIP 50V 0.1	
C3520	ECUV1H104ZFN	C CHIP 50V 0.1	
C3523	ECUV1E104ZFN	C CHIP 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP 50V 0.01	
C4401	ECUV1H102KBN	C CHIP 50V 1000P	
C4402	ECUV1H102KBN	C CHIP 50V 1000P	
C4405	ECUV1H103ZFN	C CHIP 50V 0.01	
C4406	ECUV1H472KBN	C CHIP 50V 4700P	

Ref. No.	Part No.	Part Name & Description	Remarks
C4408	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4409	ECUV1H103ZFN	C CHIP 50V 0.01	
C4411	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
C4412	ECUV1H104ZFN	C CHIP 50V 0.1	
C4413	ECUV1H104ZFN	C CHIP 50V 0.1	
C4414	ECEA0JKA470	ELECTROLYTIC 6.3V 47	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3501	ELESN101KA	100	
L4401	VLQSH02R101K	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2601	LSJS0096	CONNECTOR 12P	
P3501	VJSS0886	CONNECTOR 20P	
P4091	LSJWM6S085AC	CONNECTOR CABLE W/OUT PLUG,AC 40VP-P	

12.3.6. CAPSTAN STATOR C.B.A. NR

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC2501	AN3845SC	IC, LINEAR	
	OR AN3846SC	IC, LINEAR	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2501	ERJ8GEYJ1R0Z	MGF CHIP 1/8W 1	
R2502	ERJ8GEYJ1R0Z	MGF CHIP 1/8W 1	
R2505	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C2504	ECUV1H103ZFN	C CHIP 50V 0.01	
C2506	ECUV1H103ZFN	C CHIP 50V 0.01	
C2507	ECUV1H103ZFN	C CHIP 50V 0.01	
C2508	ECUV1E104KBN	C CHIP 25V 0.1	
C2509	ECUV1E104KBN	C CHIP 25V 0.1	
C2510	ECUV1E104KBN	C CHIP 25V 0.1	
C2511	ECUV1E104ZFN	C CHIP 25V 0.1	
C2517	ECUV1E104KBN	C CHIP 25V 0.1	
C2519	ECUV1H102KBN	C CHIP 50V 1000P	
C2520	ECUV1C225ZFN	C CHIP 16V 2.2	
C2521	ECUV1C225ZFN	C CHIP 16V 2.2	
C2522	ECUV1C225ZFN	C CHIP 16V 2.2	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2503	VJSS3337	CONNECTOR 2P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
490	XQN2+B35	SCREW,STEEL	
491	XYN2+J7	SCREW W/WASHER,STEEL	
731(IC2505)	EZMPS300F12	MR HEAD	
732(P2502)	LSJS0097	CONNECOR 12P	
733	LSMA0384	BACK PLATE,STEEL	

12.3.7. TUNER MAIN C.B.A

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC9551	UPC4570G	IC,LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q591	**2SC3311A(R,S)**		
	OR 2SC3311AI(R,S)		
Q801	**2SC3311A(R,S)**		
	OR 2SC3311AI(R,S)		
Q7001	**2SA1037K146R**	**CHIP**	
	OR 2SB709A	**CHIP**	
Q7101	**2SA1037K146R**	**CHIP**	
	OR 2SB709A	**CHIP**	
Q9501	**2SC2412K1**	**CHIP**	
	OR 2SD601A	**CHIP**	
Q9502	**2SC2412K1**	**CHIP**	
	OR 2SD601A	**CHIP**	
Q9503	**2SC2412K1**	**CHIP**	
	OR 2SD601A	**CHIP**	
Q9504	**2SC2412K1**	**CHIP**	
	OR 2SD601A	**CHIP**	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D591	**LSRPBF4HM3R0**	**THEARMISTOR**	⚠ **MKA**
D592	**MA167**		
	OR 4148-TA		**MKA**
D801	**ERZV10V361CS**	**SURGE ABSORBER 360**	⚠ **MKA**
D802	**ERZV10V361CS**	**SURGE ABSORBER 360**	⚠ **MKA**
D803	**MA167**		
	OR 4148-TA		**MKA**
D804	**ERC13-08V**		⚠
D805	**ERC13-08V**		⚠
D806	**ERC13-08V**		⚠
D807	**ERC13-08V**		⚠
D9501	**MA4091-M**	**ZENER 9.1V**	
	OR MA4091-MKT	**ZENER 9.1V**	
	OR MA4091-MMKT	**ZENER 9.1V**	
	OR RD9.1ESAB1	**ZENER 9.1V**	
	OR RD9.1ESAB2	**ZENER 9.1V**	
	OR 04AZ9.1ZTPA7	**ZENER 9.1V**	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R591	ERDS2TJ103	10K	
R592	ERDS2TJ472	4.7K	
R801	VRESC2TK825T	SOLID 1/2W 8.2M	⚠
R802	ERDS2TJ472	4.7K	
R803	ERDS2TJ103	10K	
R804	ERF5ZKR82	W FLMPRF 5W 0.82	⚠
R7001	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7002	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7005	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R7006	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7007	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7008	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7101	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7102	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7103	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R7104	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7105	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9501	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R9502	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R9506	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9508	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9510	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9511	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9517	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9518	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9519	ERJ6GEYG271V	MGF CHIP 1/10W 270	
R9525	ERJ6GEYG271V	MGF CHIP 1/10W 270	
R9526	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R9527	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9528	ERJ6GEYG331V	MGF CHIP 1/10W 330	
R9529	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R9532	ERJ6GEYG101V	MGF CHIP 1/10W 100	MKA
R9545	ERJ6GEYG562V	MGF CHIP 1/10W 5.6K	
R9546	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R9551	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R9552	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R9553	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9554	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C801	ECQU2A823MLA	POLYESTER 250V 0.082	⚠ MKA
	OR LSCFQ2A823MC	POLYESTER 250V 0.082	⚠ MKA
C802	VSQ1003-F	ARRESTER	⚠ MKA
C803	ECKATS103MF	CERAMIC 250V 0.01	⚠
	OR ECKETS103MF	CERAMIC 250V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC 125V 0.01	⚠
	OR VCKST3G103MY	CERAMIC 250V 0.01	⚠
	OR VCKSU3D103MY	CERAMIC 125V 0.01	⚠
C806	ECKM2H472PE	CERAMIC 500V 4700P	
C807	ECKM2H472PE	CERAMIC 500V 4700P	
C808	ECKM2H472PE	CERAMIC 500V 4700P	
C809	ECKM2H472PE	CERAMIC 500V 4700P	
C7002	ECUV1H102KBN	C CHIP 50V 1000P	
C7006	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C7008	ECUV1H103ZFN	C CHIP 50V 0.01	
C7010	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7101	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C7106	ECUV1H103ZFN	C CHIP 50V 0.01	
C7107	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9502	ECUV1H103ZFN	C CHIP 50V 0.01	
C9507	ECEA1CKA220	ELECTROLYTIC 16V 22	
C9510	ECUV1H103ZFN	C CHIP 50V 0.01	
C9511	ECUV1H103ZFN	C CHIP 50V 0.01	
C9512	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C9518	ECEA1CKA220	ELECTROLYTIC 16V 22	
C9519	ECEA1CKA101	ELECTROLYTIC 16V 100	
C9551	ECUV1H101JCN	C CHIP 50V 100P	
C9552	ECUV1H101JCN	C CHIP 50V 100P	
C9553	ECUV1H103ZFN	C CHIP 50V 0.01	
C9554	ECUV1H103ZFN	C CHIP 50V 0.01	
C9555	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9556	ECEA1CKA100	ELECTROLYTIC 16V 10	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L801	ELF21V025A	LINE FILTER	⚠ MKA
L802	ELF21V025A	LINE FILTER	⚠ MKA
L7002	VLQSAB7D100K	10	
L7101	VLQSAB7D100K	10	
L9515	ELESN101KA	100	
L9551	ELESN101KA	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P801	LSJP0814	CONNECTOR 2P	MKA
P802	VEKS5769	CONNECTOR CABLE W/PLUG,DC 160V	MKA
P803	VEKS5770	CONNECTOR CABLE W/PLUG,AC 120V	MKA
P807	VEKS5767	CONNECTOR CABLE W/PLUG,DC 30V	MKA
P7101	VJPS0772	CONNECTOR PLUG 19P	MKA
P7102	VJPS0772	CONNECTOR PLUG 19P	MKA
P9503	VEKS5763	CONNECTOR CABLE W/PLUG,DC 5V	MKA

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F801	XBA1F63NU100	FUSE 125V/250V 6.3A	⚠ MKA

RELAY

Ref. No.	Part No.	Part Name & Description	Remarks
RL591	TSEH0019	RELAY	⚠ MKA
	OR TSEH0005	RELAY,120V	⚠
	OR TSEH0013	RELAY	⚠ MKA
RL801	LSSY0004	RELAY	⚠ MKA
	OR TSEH0005	RELAY,120V	⚠
	OR TSEH0013	RELAY	⚠ MKA
	OR TSEH1860-1	REALY	⚠ MKA
	OR TSEH8007	RELAY,120V	⚠ MKA

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK9501	LJP28005A	S-VIDEO JACK SOCKET	MKA
JK9502	LSJJ0167	AUDIO/VIDEO JACK SOCKET	MKA

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
96	TMM7464-1	CLAMPER	
741	LSJA0349-FE	AC CORD W/PLUG,125V	⚠ MKA
742	TJC6319	FUSE HOLDER	
743	ENG36707G	TUNER 1,UHF/VHF NR	MKA
744	ENG36708G	TUNER 2,UHF/VHF NR	MKA
745	VEKS5774	CONNECTOR CABLE W/PLUG,DC 5V	MKA

12.3.8. TV MAIN C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC850	STR-F6626	IC, LINEAR	⚠ MKA
IC451	LA78045	IC, LINEAR	MKA
IC752	AN1358S-E1	IC, LINEAR	
IC851	0N3131-R.KT	IC, LINEAR	⚠
	OR 0N3131-S.KT	IC, LINEAR	⚠
IC852	SE140N	IC, LINEAR	MKA
IC4501	TA8211AH	IC, LINEAR	
IC4601	BD3867S	IC, LOGIC	E.S.D. MKA

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q401	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		
Q501	2SC4212H(L,B)		
Q511	2SA1309A(R,S)		MKA
	OR 2SA1309AI(R,S)		
Q512	2SC3311ARS		MKA
Q551	2SD2553LBK		⚠ MKA
Q555	2SA1321TPE6		MKA
	OR 2SA1767(Q)		MKA
	OR 2SB1221(Q)		MKA
Q751	2SD1499-PLB		MKA
	OR 2SD1499-QLB		MKA
Q753	2SA1309A(R,S)		MKA
	OR 2SA1309AI(R,S)		
Q903	2SC3425RLK0T		MKA
Q904	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		
Q905	2SC4572-RB11		MKA
Q906	2SC1473-QNC		
	OR 2SC1473A(Q)		
	OR 2SC2482(T)		MKA
	OR 2SC4015(N)		MKA
Q907	2SC1473-QNC		
	OR 2SC1473A(Q)		
	OR 2SC2482(T)		MKA
	OR 2SC4015(N)		MKA
Q908	2SC1684(Q,R,S)		
	OR 2SC2785(TE)		MKA
	OR 2SC2785(TF)		MKA
	OR 2SC2785(TH)		MKA
	OR 2SC2785(TJ)		MKA
	OR 2SC2785(TK)		MKA
	OR 2SC3311A(Q,R,S)		
	OR 2SC945A(TKA)		
	OR 2SC945A(TPA)		
	OR 2SC945A(TQA)		

Ref. No.	Part No.	Part Name & Description	Remarks
Q4501	2SD1328(T)	CHIP	MKA
Q4502	2SD1328(T)	CHIP	MKA
Q4503	2SD1581(T)		
	OR 2SD2159(T)		

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D404	ERB12-01		
	OR ERB12-01RKV1		
	OR ERB12-01V		
D405	MA165		
	OR 1SS119		
	OR 1SS133T		
D406	MA165		
	OR 1SS119		
	OR 1SS133T		
D407	MA165		
	OR 1SS119		
	OR 1SS133T		
D408	MA700		
D511	MA165		
	OR 1SS119		
	OR 1SS133T		
D512	MA165		
	OR 1SS119		
	OR 1SS133T		
D553	MA4270-H	ZENER 27V	
	OR MA4270-M	ZENER 27V	
D555	RH3F014305		MKA
D556	RU3ANLFC2		MKA
D557	ERB43-04V		
	OR ES1V		
D558	ERB43-04V		
	OR ES1V		
D565	MA4110-M	ZENER	
D566	MA167		
	OR 4148-TA		MKA
D567	MA165		
	OR 1SS119		
	OR 1SS133T		
D568	MA4047-H	ZENER 4.7V	
	OR MA4047-M	ZENER 4.7V	
	OR RD4.7ESAB	ZENER 4.7V	
	OR RD4.7ESAB2	ZENER 4.7V	
	OR 04AZ4.7ZTPA7	ZENER 4.7V	
D704	MA29T-A		
D851	AK03		
	OR 1GWJ43		
D852	ERB43-04V1		MKA

Ref. No.	Part No.	Part Name & Description	Remarks
D853	EG01		
	OR ERA18-04		
D854	ERB43-04V1		MKA
D855	ERB43-04V1		MKA
D856	ERB43-04V1		MKA
D857	EG01		
	OR ERA18-04		
D858	RU30A014-305		
D859	EK19V1		
D860	EK19V1		
D903	MA165		
	OR 1SS119		
	OR 1SS133T		
D904	ERA22-06V5		MKA
D905	RP1HLFA5	DIODE 2KV	MKA
D906	MA165		
	OR 1SS119		
	OR 1SS133T		
D907	MA165		
	OR 1SS119		
	OR 1SS133T		
D4501	MA165		
	OR 1SS119		
	OR 1SS133T		
D4502	MA165		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R401	**ERJ6ENF1202V**	**MGF CHIP 1/10W 12K**	
R403	**ERX1SJ3R9P**	**METAL FILM 1W 3.9**	
R404	**ERJ6ENF5231V**	**MGF CHIP 1/10W 5.23K**	**MKA**
R406	**ERJ6ENF1781V**	**MGF CHIP 1/10W 1.78K**	**MKA**
R408	**ERJ6ENF1202V**	**MGF CHIP 1/10W 12K**	
R409	**ERDS2TJ271**	**270**	
R410	**ERDS2TJ102**	**1K**	
R411	**ERJ6GEYJ182V**	**MGF CHIP 1/10W 1.8K**	
R412	**ERDS2TJ331**	**330**	
R413	**ERJ6GEYJ223V**	**MGF CHIP 1/10W 22K**	
R414	**ERJ6GEY0R00V**	**MGF CHIP 1/10W 0**	
R416	**ERDS1FJ6R8P**	**1/2W 6.8**	⚠ **MKA**
R417	**ERJ6GEYJ682V**	**MGF CHIP 1/10W 6.8K**	
R418	**ERDS2TJ272**	**2.7K**	
R419	**ERDS2TJ563**	**56K**	
R420	**ERJ6GEYJ104V**	**MGF CHIP 1/10W 100K**	
R421	**ERG2FJ331H**	**METAL OXIDE 2W 330**	**MKA**
R422	**ERJ6GEYJ123V**	**MGF CHIP 1/10W 12K**	
R423	**ERX1SJ3R9P**	**METAL FILM 1W 3.9**	
R433	**ERJ6GEYJ150V**	**MGF CHIP 1/10W 15**	
R434	**ERJ6GEY0R00V**	**MGF CHIP 1/10W 0**	
R435	**ERDS2TJ101**	**100**	
R437	**ERDS2TJ183**	**18K**	
R450	**ERDS2TJ104**	**100K**	
R501	**ERDS2TJ271**	**270**	
R502	**ERDS2TJ561**	**560**	
R504	**LAR05272J09**	**W FLMPLF 5W 2.7K**	**MKA**
R505	**ERG3FJ332H**	**METAL OXIDE 3W 3.3K**	**MKA**
R506	**ERJ6GEYJ101V**	**MGF CHIP 1/10W 100**	
R507	**ERJ6GEYJ562V**	**MGF CHIP 1/10W 5.6K**	
R508	**ERDS2TJ221**	**220**	
R509	**ERDS2TJ152**	**1.5K**	
R510	**ERDS2TJ151**	**150**	
R511	**ERDS2TJ392**	**3.9K**	
R512	**ERDS2TJ822**	**8.2K**	
R513	**ERDS2TJ103**	**10K**	
R514	**ERDS2TJ682**	**6.8K**	
R515	**ERDS2TJ392**	**3.9K**	
R516	**ERDS2TJ822**	**8.2K**	
R517	**ERDS2TJ681**	**680**	
R534	**ERJ6GEYJ103V**	**MGF CHIP 1/10W 10K**	
R553	**ERDS1FJ1R5P**	**1/2W 1.5**	⚠
R554	**ERG1ANJ122H**	**METAL OXIDE 1W 1.2K**	
R555	**ERQ2CJP1R5S**	**FUSE 2W 1.5**	⚠ **MKA**
R556	**ER0S2THF2872**	**METAL FILM 28.7K**	⚠ **MKA**
	OR ER0S2TKF2872	**METAL FILM 28.7K**	⚠ **MKA**
R560	**ERQ14AJ4R7P**	**FUSE 4.7**	⚠ **MKA**
R561	**ERDS2TJ183**	**18K**	

Ref. No.	Part No.	Part Name & Description	Remarks
R562	ERF5ZK1R8	W FLMPRF 5W 1.8	MKA
R565	ERDS2TJ123	12K	
R566	ERC12GK103	SOLID 1/2W 10K	MKA
R567	ER0S2THF1003	METAL FILM 100K	
R569	ER0S2THF1002	METAL FILM 10K	MKA
R570	ERDS1FJ1R3P	1/2W 1.3	⚠ MKA
R571	ERDS1FJ1R3P	1/2W 1.3	⚠ MKA
R572	ERDS2TJ563	56K	
R577	ERDS2TJ681	680	
R581	ERDS2TJ822	8.2K	
R582	ERDS2TJ103	10K	
R583	ERDS2TJ393	39K	
R584	ERDS2TJ473	47K	
R586	ERDS1FJ1R2P	1/2W 1.2	⚠
R587	ERDS1FJ1R2P	1/2W 1.2	⚠
R588	ERDS2TJ392	3.9K	
R589	ERDS1FJ102P	1/2W 1K	⚠ MKA
R701	ERQ12AJ101P	FUSE 1/2W 100	⚠ MKA
R710	ERX2FJ6R8H	METAL OXIDE 2W 6.8	MKA
R713	ERDS2TJ221	220	
R714	ERDS1TJ821	1/2W 820	
R756	ERDS2TJ821	820	
R759	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R760	EVMEAGA00B54	VARIABLE 50K	MKA
R761	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R762	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R765	ERDS2TJ102	1K	
R766	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R771	ERJ6ENF2151V	MGF CHIP 1/10W 2.15K	MKA
R772	ERJ6ENF1001V	MGF CHIP 1/10W 1K	
R773	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R774	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R850	ERG2SJ273H	METAL OXIDE 2W 27K	MKA
R851	ERDS2TJ683	68K	
R852	ERDS2TJ683	68K	
R854	ERD2FCG681P	FUSE 680	⚠ MKA
R855	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R856	ERX2SZJR10P	METAL FILM 2W 0.1	MKA
R857	ERG3SJ333H	METAL OXIDE 3W 33K	
R859	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R860	VRESE2TJ150	1/2W 15	
R861	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R862	ERDS2TJ473	47K	
R866	ERDS2TJ473	47K	
R919	ERC12GK104	SOLID 1/2W 100K	MKA
R920	ERDS2TJ125	1.2M	
R921	ERDS2TJ125	1.2M	
R922	ER0S2TKF6492	METAL FILM 64.9K	MKA

Ref. No.	Part No.	Part Name & Description	Remarks
R923	ERG1FJ472H	METAL OXIDE 1W 4.7K	MKA
R924	ERQ2CJP471S	FUSE 2W 470	⚠ MKA
R925	ERQ2CJP681S	FUSE 2W 680	⚠ MKA
R926	ERQ2CJP681S	FUSE 2W 680	⚠ MKA
R927	ERDS2TJ334	330K	
R928	ERDS2TJ101	100	
R929	ERDS2TJ473	47K	
R930	ER0S2TKF6341	METAL FILM 6.34K	MKA
R931	ERDS2TJ104	100K	
R932	ERDS2TJ104	100K	
R933	ERDS2TJ104	100K	
R934	ERDS2TJ124	120K	
R937	ERDS2TJ101	100	
R939	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R941	ERDS2T0	0	
R4501	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R4502	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R4503	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4504	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4505	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4506	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4507	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4508	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4509	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4510	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4513	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R4514	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R4515	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4516	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4519	ERDS2TJ4R7	4.7	
R4520	ERDS2TJ4R7	4.7	
R4521	ERDS2TJ4R7	4.7	
R4522	ERDS2TJ4R7	4.7	
R4523	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4601	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R4602	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R4603	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4604	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4605	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4606	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4607	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4608	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4609	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4610	ERJ6GEYJ101V	MGF CHIP 1/10W 100	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C401	ECQB1H104KF	POLYESTER 50V 0.1	
C403	ECA1EM222E	ELECTROLYTIC 25V 2200	MKA
C404	ECA1CM101B	ELECTROLYTIC 16V 100	
C405	ECA1HM100B	ELECTROLYTIC 50V 10	
C406	EEUNA1E220B	ELECTROLYTIC 25V 22	MKA
C407	ECUV1H471JCN	C CHIP 50V 470P	
C409	ECA1HM221E	ELECTROLYTIC 50V 220	MKA
C410	ECQB1224JF	POLYESTER 100V 0.22	MKA
C412	ECA1EM222E	ELECTROLYTIC 25V 2200	MKA
C413	ECA1HM010B	ELECTROLYTIC 50V 1	
C414	ECQB1104JF	POLYESTER 100V 0.1	MKA
C415	ECUV1H103KBN	C CHIP 50V 0.01	
C418	ECA1HM102E	ELECTROLYTIC 50V 1000	MKA
C501	ECKW2H332KB5	CERAMIC 500V 3300P	MKA
C502	ECKW2H332KB5	CERAMIC 500V 3300P	MKA
C511	ECA1CM101B	ELECTROLYTIC 16V 100	
C512	ECA1CM101B	ELECTROLYTIC 16V 100	
C550	ECQF6223JZH	POLYESTER 630V 0.022	⚠ MKA
C551	ECWF2394JSR	POLYESTER 250V 0.39	⚠ MKA
C552	ECWH20103JVB	POLYESTER 2000V 0.01	⚠ MKA
C553	ECWF2394JSR	POLYESTER 250V 0.39	⚠ MKA
C554	ECQF6103JZH	POLYESTER 630V 0.01	⚠ MKA
C555	ECWH20272JVY	POLYESTER 2000V 2700P	⚠ MKA
C556	ECWF2754JSR	POLYESTER 250V 0.75	⚠ MKA
C557	EEUNA1E220B	ELECTROLYTIC 25V 22	MKA
C558	ECQE2104JF	POLYESTER 250V 0.1	MKA
C559	ECQE2104JF	POLYESTER 250V 0.1	MKA
C562	ECKC3D121KBP	CERAMIC 2KV 120P	⚠ MKA
	OR ECKE3D121KBP	CERAMIC 2KV 120P	⚠ MKA
	OR ECKW3D121KBP	CERAMIC 2KV 120P	⚠ MKA
C563	ECKW2H122KB5	CERAMIC 500V 1200P	
C564	ECKW2H122KB5	CERAMIC 500V 1200P	
C565	ECA1HM100B	ELECTROLYTIC 50V 10	
C568	ECA2EM220B	ELECTROLYTIC 250V 22	⚠ MKA
C570	ECKW2H152KB5	CERAMIC 500V 1500P	
C571	ECKC3D681KBP	CERAMIC 2KV 680P	⚠ MKA
	OR ECKE3D681KBP	CERAMIC 2KV 680P	⚠ MKA
	OR ECKW3D681KBP	CERAMIC 2KV 680P	⚠ MKA
C572	ECKC3D681KBP	CERAMIC 2KV 680P	⚠ MKA
	OR ECKE3D681KBP	CERAMIC 2KV 680P	⚠ MKA
	OR ECKW3D681KBP	CERAMIC 2KV 680P	⚠ MKA
C573	ECQB1H183JF3	POLYESTER 50V 0.018	⚠ MKA
	OR ECQB1H183JM3	POLYESTER 50V 0.018	⚠ MKA
	OR VCFSA1H183JT	POLYESTER 50V 0.018	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C574	**ECA1CM101B**	**ELECTROLYTIC 16V 100**	
C575	**ECEA160V33**	**ELECTROLYTIC 160V 33**	**MKA**
C576	**ECQB1H333KM**	**POLYESTER 50V 0.033**	**MKA**
C703	**ECQE1685KF**	**POLYESTER 100V 6.8**	**MKA**
C704	**ECQE2474KF**	**POLYESTER 250V 0.47**	**MKA**
C761	**ECUV1H103ZFN**	**C CHIP 50V 0.01**	
C762	**ECA1CM470B**	**ELECTROLYTIC 16V 47**	
C764	**ECUV1H222KBN**	**C CHIP 50V 2200P**	
C765	**ECQB1H223JF**	**POLYESTER 50V 0.022**	
C768	**ECUV1H562KBN**	**C CHIP 50V 5600P**	
C850	**ECA1HHG470B**	**ELECTROLYTIC 50V 47**	
C851	**ECKW1H102KB5**	**CERAMIC 50V 1000P**	
C852	**ECKW1H471KB5**	**CERAMIC 50V 470P**	
C853	**ECEC2DP821CB**	**ELECTROLYTIC 200V 820**	⚠ **MKA**
	OR VCESAS2D821E	**ELECTROLYTIC 200V 820**	⚠ **MKA**
C854	**ECKW2H221KB5**	**CERAMIC 500V 220P**	
C855	**ECA2DHG4R7B**	**ELECTROLYTIC 200V 4.7**	
C856	**LSCKE8M222KR**	**CERAMIC 25V 2200P**	**MKA**
C857	**ECUV1H122KBN**	**C CHIP 50V 1200P**	
C858	**ECUV1E223KBN**	**C CHIP 25V 0.022**	
C859	**ECKETS222ME**	**CERAMIC 250V 2200P**	⚠ **MKA**
C861	**LSCKEKL102KR**	**CERAMIC 25V 1000P**	**MKA**
C862	**ECUV1H102KBN**	**C CHIP 50V 1000P**	
C863	**ECUV1H102KBN**	**C CHIP 50V 1000P**	
C864	**ECUV1H223KBN**	**C CHIP 50V 0.022**	
C865	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C866	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C867	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C868	**ECEC2DP471BB**	**ELECTROLYTIC 200V 470**	⚠ **MKA**
C870	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C871	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C872	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C873	**EEUFD1V331LB**	**ELECTROLYTIC 35V 330**	
C874	**ECKETS222ME**	**CERAMIC 250V 2200P**	⚠ **MKA**
C918	**ECEA1HN4R7**	**ELECTROLYTIC 50V 4.7**	**MKA**
C919	**ECKC3D102KB**	**CERAMIC 2KV 1000P**	
C920	**EEANA1E2R2B**	**ELECTROLYTIC 25V 2.2**	**MKA**
C921	**ECKC3A101KB**	**CERAMIC 1KV 100P**	**MKA**
C922	**ECKC3A332KB**	**CERAMIC 1KV 3300P**	**MKA**
C923	**ECKC3A681KB**	**CERAMIC 1KV 680P**	**MKA**
C924	**ECKC3D821KB**	**CERAMIC 2KV 820P**	**MKA**
C925	**ECQM4223KZ**	**POLYESTER 400V 0.022**	**MKA**
C926	**ECQM4223KZ**	**POLYESTER 400V 0.022**	**MKA**
C927	**ECA1HM010B**	**ELECTROLYTIC 50V 1**	
C928	**ECKC3A471KB**	**CERAMIC 1KV 470P**	**MKA**
C4501	**ECA1CM101B**	**ELECTROLYTIC 16V 100**	
C4502	**ECA1CM101B**	**ELECTROLYTIC 16V 100**	
C4503	**ECUV1H222KBN**	**C CHIP 50V 2200P**	
C4504	**ECUV1H222KBN**	**C CHIP 50V 2200P**	

C4504	ECUV1H222KBN	C CHIP 50V 2200P	

Ref. No.	Part No.	Part Name & Description	Remarks
C4505	ECUV1H222KBN	C CHIP 50V 2200P	
C4506	ECUV1H222KBN	C CHIP 50V 2200P	
C4507	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4508	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4509	ECA1EM470B	ELECTROLYTIC 25V 47	
C4510	ECA1EM470B	ELECTROLYTIC 25V 47	
C4511	ECQB1H104KF	POLYESTER 50V 0.1	
C4512	ECQB1H104KF	POLYESTER 50V 0.1	
C4513	ECA1CM102B	ELECTROLYTIC 16V 1000	
C4514	ECA1CM102B	ELECTROLYTIC 16V 1000	
C4515	ECA1EM101B	ELECTROLYTIC 25V 100	
C4516	ECA1EM102B	ELECTROLYTIC 25V 1000	MKA
C4518	ECA1EM471B	ELECTROLYTIC 25V 470	
C4519	ECA1EM101B	ELECTROLYTIC 25V 100	
C4520	ECA1EM101B	ELECTROLYTIC 25V 100	
C4525	ECUV1H103KBN	C CHIP 50V 0.01	
C4601	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4602	ECA1CM100B	ELECTROLYTIC 16V 10	
C4603	ECUV1E683KBN	C CHIP 25V 0.068	
C4604	ECUV1H102KBN	C CHIP 50V 1000P	
C4605	ECA1CM100B	ELECTROLYTIC 16V 10	
C4606	ECA1CM100B	ELECTROLYTIC 16V 10	
C4612	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4616	ECUV1E104ZFN	C CHIP 25V 0.1	
C4617	ECUV1E104ZFN	C CHIP 25V 0.1	
C4618	ECA1CM100B	ELECTROLYTIC 16V 10	
C4619	ECUV1H102KBN	C CHIP 50V 1000P	
C4620	ECUV1E683KBN	C CHIP 25V 0.068	
C4621	ECA1CM100B	ELECTROLYTIC 16V 10	
C4622	ECA1CM100B	ELECTROLYTIC 16V 10	
C4623	ECA1CM471B	ELECTROLITIC 16V 470	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L401	ELESN101KA	100	
L551	ELH5L7113	LINEARITY COIL	⚠ MKA
L552	ELHKLB051B	LINEARITY COIL	⚠ MKA
L553	VLPS0088	FERRITE BEAD CORE	MKA
L554	VLPS0088	FERRITE BEAD CORE	MKA
L555	VLPS0113	FERRITE BEAD	MKA
L701	LSLQC15D821K	820	MKA
L703	LSLQC15D821K	820	MKA
L704	LSLQA10R682J	6800	MKA
L851	VLPS0087		MKA
L852	VLPS0083		
L853	VLPS0087		MKA
L855	LSLF0065	INDUCTOR CHIP	MKA
L856	VLQSAB7D220K	22	
L857	VLQSAB7D220K	22	
L858	VLQSAB7D220K	22	
L859	LSLF0065	INDUCTOR CHIP	MKA
L860	VLQSAB7D220K	22	
L901	LSLQA13R682J	6800	MKA
L905	LSLQA13R152J	1500	MKA
L4501	VLQSAB7D680K	68	MKA
L4601	VLQSH02R101K	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P501	VJPS0281	12P	
P502	VJPS0277	CONNECTOR 7P	
P503	VJPS0532	CONNECTOR 6P	MKA
P850	LSJP0773	CONNECTOR 2P	MKA
P852	VEKS5800	CONNECTOR CABLE W/PLUG,0V	MKA
P4501	VJPS0268	CONNECTOR 2P	
P4502	VEKS5798	CONNECTOR CABLE W/PLUG,DC 22V	MKA
P4503	VJPS0268	CONNECTOR 2P	
P4506	VJPS0274	CONNECTOR 4P	
P4603	VEKS5762	CONNECTOR CABLE W/PLUG,DC 9V	MKA
P6299	VJPS0275	CONNECTOR 5P	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
PR850	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR LSSF009A25E	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR851	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR LSSF009A25E	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR852	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR LSSF009A25E	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T501	ETH19Y70AY		
T551	ZTFM77016A1		⚠ MKA
T850	ETS39AG2P5AC		⚠ MKA
T901	ETF18L105A		MKA

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E51	LRP63020A	DEFLECTION C.B.A.	MKA

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
96	TMM7464-1	CLAMPER	
154	TMM5439-1	CLAMPER	
244	TUX77809	CLAMPER	MKA
714	VMTS0059	CUSHION,RUBBER	
432	XTV3+8JR	TAPPING SCREW,STEEL	
443	XTV4+12A	TAPPING SCREW,STEEL	
484	XTW3+10J	TAPPING SCREW,STEEL	
485	XYE3+EJ10	SCREW W/WASHER,STEEL	
483	XYN3+F10S	SCREW W/WASHER,STEEL	
486	XYN3+F12S	SCREW W/WASHER,STEEL	
487	XYN3+J8	SCREW W/WASHER,STEEL	MKA
751	LML69001A	ANODE LEAD CLAMPER	MKA
752	LSMA0444	HEAT SINK	MKA
753	LSSC0256	AUDIO OUTPUT HEAT SINK	MKA
754	LSSC0438	HEAT SINK	MKA
755	TMM16480-1	CLAMPER	
757	LSSC0410	HEAT SINK	MKA

12.3.9. DEFLECTION C.B.A

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC901	MC14538BCP	IC, LINEAR	MKA
IC902	CA0005AD	IC, LINEAR	MKA
IC903	AN1358S-E1	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q901	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q902	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D901	HZS5C1TD	ZENER 5.1V	MKA
	OR MA4051-L	ZENER 5.1V	
	OR 04AZ5.1XTPA7	ZENER 5.1V	MKA
D902	HZS5C1TD	ZENER 5.1V	MKA
	OR MA4051-L	ZENER 5.1V	
	OR 04AZ5.1XTPA7	ZENER 5.1V	MKA
D951	MA4150-M	ZENER 15V	
D954	MA4150-M	ZENER 15V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R901	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R902	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R903	ERJ6ENF5232V	MGF CHIP 1/10W 52.3K	MKA
R904	ERJ6ENF2263V	MGF CHIP 1/10W 226K	MKA
R905	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R906	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R907	ERDS2TJ681	680	
R908	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R909	ERJ6ENF1213V	MGF CHIP 1/10W 121K	MKA
R910	ERJ6ENF1003V	MGF CHIP 1/10W 100K	MKA
R911	ERDS1FJ391P	1/2W 390	MKA
R912	ERDS1FJ561P	1/2W 560	
R913	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R914	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R915	ERDS2TJ182	1.8K	
R916	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R917	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R918	ERJ6ENF1133V	MGF CHIP 1/10W 113K	MKA
R936	EVMEGGA00B54	VARIABLE 50K	MKA

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C901	ECUV1H471JCN	C CHIP 50V 470P	
C902	ECUV1H151JCN	C CHIP 50V 150P	
C903	ECUV1H151JCN	C CHIP 50V 150P	
C904	ECA1CM100B	ELECTROLYTIC 16V 10	
C905	EEANA1E100B	ELECTROLYTIC 25V 10	MKA
C906	ECA1HM100B	ELECTROLYTIC 50V 10	
C907	EEANA1E100B	ELECTROLYTIC 25V 10	MKA
C908	EEANA1E100B	ELECTROLYTIC 25V 10	MKA
C909	ECUV1H103ZFN	C CHIP 50V 0.01	
C910	ECA1HM100B	ELECTROLYTIC 50V 10	
C911	ECUV1H103ZFN	C CHIP 50V 0.01	
C915	EEANA1E4R7B	ELECTROLYTIC 25V 4.7	MKA
C916	ECA1HM100B	ELECTROLYTIC 50V 10	
C917	ECQB1H102JF	POLYESTER 50V 1000P	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P952	VJHS0298	PACK PIN 8P	
P953	VJHS0293	PACK PIN 3P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
713	VMAS1912	P.C.B. SUPPORT ANGLE	

12.3.10. CRT C.B.A

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC351	TDA6103Q	IC, LINEAR	MKA

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q5051	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		
Q5052	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		
Q5053	2SC1741S		MKA
Q5054	2SB1030A		MKA
Q5055	2SB1569A-F51		MKA
Q5056	2SD2400A-F51		MKA
Q5057	2SA1309A(R,S)		MKA
	OR 2SA1309AI(R,S)		
Q5058	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		
Q5061	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		
Q5062	2SC3311A(R,S)		
	OR 2SC3311AI(R,S)		

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D352	ERA22-04V5		MKA
D353	ERA22-04V5		MKA
D354	ERA22-04V5		MKA

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R351	ERG1SJW104E	METAL OXIDE 1W 100K	MKA
R352	ERG1SJW104E	METAL OXIDE 1W 100K	MKA
R353	ERG1SJW104E	METAL OXIDE 1W 100K	MKA
R354	ERD25TJ102	1K	
R355	ERD25TJ102	1K	
R356	ERD25TJ102	1K	
R363	ERDS2TJ821	820	
R364	ERDS2TJ102	1K	
R365	ERDS2TJ821	820	
R366	ERDS2TJ102	1K	
R367	ERDS2TJ821	820	
R368	ERDS2TJ102	1K	
R369	ERDS2TJ102	1K	
R371	ERDS2TJ102	1K	
R373	ERDS2TJ102	1K	
R375	ERDS2TJ102	1K	
R376	ERDS2TJ473	47K	
R377	ERDS2TJ103	10K	
R378	ERDS2TJ104	100K	
R379	ERDS2TJ124	120K	
R380	ERDS2TJ472	4.7K	
R385	ERQ12AJ121E	FUSE 1/2W 120	⚠ MKA
R386	ERDS2TJ331	330	
R387	ERDS2TJ331	330	
R388	ERDS2TJ331	330	
R5051	ERDS2TJ821	820	
R5052	ERDS2TJ223	22K	
R5053	ERDS2TJ332	3.3K	
R5054	ERDS2TJ431	430	MKA
R5056	ERDS2TJ510	51	MKA
R5058	ERDS2TJ391	390	
R5059	ERDS2TJ101	100	
R5060	ERG12SJW100E	METAL OXIDE 1/2W 10	MKA
R5061	ERQ1ABJP331S	FUSE 1W 330	⚠ MKA
R5062	ERDS2TJ330	33	
R5063	ERDS2TJ330	33	
R5064	ERDS2TJ471	470	
R5065	ERDS2TJ563	56K	
R5066	ERG12SJW471E	METAL OXIDE 1/2W 470	MKA
R5067	ERDS2TJ563	56K	
R5068	ERDS2TJ471	470	
R5069	ERDS2TJ390	39	
R5070	ERDS2TJ2R7	2.7	
R5071	ERDS2TJ2R7	2.7	
R5072	ERDS2TJ390	39	
R5073	ERDS2TJ101	100	
R5074	ERDS2TJ333	33K	
R5075	ERDS2TJ101	100	
R5076	ERDS2TJ101	100	

Ref. No.	Part No.	Part Name & Description	Remarks
R5077	ERDS2TJ561	560	
R5078	ERDS2TJ101	100	
R5079	ERDS2TJ472	4.7K	
R5080	ERDS2TJ331	330	
R5081	ERDS2TJ682	6.8K	
R5082	ERDS2TJ471	470	
R5083	ERDS2TJ471	470	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C354	ECKC3D332KB	CERAMIC 2KV 3300P	MKA
C364	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C365	ECEA1CKN100	ELECTROLYTIC 16V 10	
C366	ECA2EM4R7B	ELECTROLYTIC 250V 4.7	MKA
C5051	ECKW1H103ZF5	CERAMIC 50V 0.01	
C5052	ECA1HM100B	ELECTROLYTIC 50V 10	
C5053	ECKW1H103ZF5	CERAMIC 50V 0.01	
C5058	ECA2CM470E	ELECTROLYTIC 160V 47	MKA
C5059	ECKW2H103ZU	CERAMIC 500V 0.01	MKA
C5060	ECKW2H151KB5	CERAMIC 500V 150P	MKA
C5061	ECA2AM100B	ELECTROLYTIC 100V 10	MKA
C5062	ECKW1H103ZF5	CERAMIC 50V 0.01	
C5063	ECKW1H151KB5	CERAMIC 50V 150P	
C5064	ECA1CHG101B	ELECTROLYTIC 16V 100	MKA
C5065	ECA1CHG101B	ELECTROLYTIC 16V 100	MKA
C5066	ECA1CM221B	ELECTROLYTIC 16V 220	
C5068	ECKW1H103ZF5	CERAMIC 50V 0.01	
C5069	ECKW1H103ZF5	CERAMIC 50V 0.01	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L5051	TSK1002		MKA
L5053	TSK1002		MKA
L5054	TSK1002		MKA
L5055	TSK1002		MKA

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P351	VJPS0276	CONNECTOR 6P	
P352	VEKS5756	CONNECTOR CABLE W/PLUG,DC 220V	MKA
P353	TJSC01100	CRT SOCKET	MKA
P369	VJPS0283	CONNECTOR 3P	
P5051	VJPS0257	2P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
763	LXPJS01F2700	CONNECTOR CABLE W/PLUG,DC 10KV	MKA
764	LXPJS02F2700	CONNECTOR CABLE W/PLUG,DC 1.2KV	MKA
96	TMM7464-1	CLAMPER	
761	TUC15717	HEAT SINK	MKA
762	TUC76649-4	HEAT SINK	
488	XYN3+F6S	SCREW W/WASHER,STEEL	
489	XYN3+F8S	SCREW W/WASHER,STEEL	

12.3.11. POWER SUPPLY C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	0N3131-R.KT	IC, LINEAR	⚠
	OR 0N3131-S.KT	IC, LINEAR	⚠
IC1002	TA76431AS	IC, LINEAR	MKA
	OR TA76431ASTP6	IC, LINEAR	MKA
IC1502	0N3131-R.KT	IC, LINEAR	⚠
	OR 0N3131-S.KT	IC, LINEAR	⚠
IC1503	TA76431AS	IC, LINEAR	MKA
	OR TA76431ASTP6	IC, LINEAR	MKA
IC4751	T0TX178	IC, LOGIC	E.S.D MKA

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4559LP.KT		⚠
	OR 2SC4130LF608		⚠
Q1002	2SD1458		
	OR 2SD2259		
Q1051	2SC3852		
	OR 2SD2375(P,Q)		
Q1052	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q1053	2SD2097TV2R	CHIP	
	OR 2SD235800A	CHIP	
Q1054	2SD2097TV2R	CHIP	
	OR 2SD235800A	CHIP	
Q1070	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q1071	2SD2259		
Q1501	2SC2412K1	CHIP	
	OR 2SD601A	CHIP	
Q1502	2SD1458		
	OR 2SD2259		
Q1503	2SC4533LP.KT		⚠

Ref. No.	Part No.	Part Name & Description	Remarks
	OR 2SC5130LF608		⚠
Q1504	2SC3852		
	OR 2SD2375(P,Q)		
Q1505	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	S1WBA60-4062		⚠
D1002	EG01		
	OR ERA18-04		
D1003	ERA18-04		
D1005	EG01		
	OR ERA18-04		
D1006	ERC30-01L3		
	OR RGP15GL-5088		MKA
	OR RU3YXLFC1		
D1008	ERC81-006L44		MKA
D1009	EG01		
	OR ERA18-04		
D1010	MA4300-M	ZENER 30V	
D1015	MA2180LA	ZENER 18V	⚠
	OR 1N4746A-T	ZENER 18V	⚠
	OR 1N4746ARL	ZENER 18V	⚠
D1017	MA165		
	OR 1SS119		
	OR 1SS133T		
D1052	MA4100N	ZENER 10V	
	OR RD10JSAB3	ZENER 10V	
D1053	MA165		
	OR 1SS119		
	OR 1SS133T		
D1054	MA165		
	OR 1SS119		
	OR 1SS133T		
D1501	MA167		
	OR 4148-TA		MKA
D1502	S1WBA60-4062		⚠
D1503	ERA18-04		
D1504	MA165		
	OR 1SS119		
	OR 1SS133T		
D1505	EG01		
	OR ERA18-04		
D1506	ERC81-006L44		MKA
D1507	ERB32-01L3		
	OR RGP15L-5088		MKA

Ref. No.	Part No.	Part Name & Description	Remarks
	OR RU2YXLFC1		
D1508	EG01		
	OR ERA18-04		
D1509	MA2180LA	ZENER 18V	⚠
	OR 1N4746A-T	ZENER 18V	⚠
	OR 1N4746ARL	ZENER 18V	⚠
D1511	MA4100N	ZENER 10V	
	OR RD10JSAB3	ZENER 10V	
D1512	MA165		
	OR 1SS119		
	OR 1SS133T		
D1513	MA165		
	OR 1SS119		
	OR 1SS133T		
D1514	MA165		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1002	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1003	VRESE2TJ154	1/2W 150K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ680P	METAL OXIDE 1W 68	
R1006	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R1007	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R1008	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R1009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1010	ERD25FJ100P	10	⚠
	OR ERD25FPJ100P	10	⚠
	OR VRESF4FJ100P	10	⚠
R1012	VRJSD6D2431V	MGF CHIP 1/10W 2.43K	MKA
R1013	VRJSD6D2201V	MGF CHIP 1/10W 2.2K	MKA
R1025	VRESE2TJ150	1/2W 15	
R1051	ERDS2TJ331	330	
R1052	ERDS2TJ331	330	
R1053	ERDS2TJ153	15K	
R1054	ERDS2TJ153	15K	
R1055	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R1056	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R1057	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1070	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R1071	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R1072	ERDS2TJ152	1.5K	
R1073	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1501	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	

Ref. No.	Part No.	Part Name & Description	Remarks
R1502	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R1503	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1504	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1505	VRESE2TJ334	1/2W 330K	
R1506	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1507	ERG1SJ560P	METAL OXIDE 1W 56	
R1508	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1509	ERG2SJ333H	METAL OXIDE 2W 33K	
R1510	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1511	VRESE2TJ150	1/2W 15	
R1512	VRJSD6D2431V	MGF CHIP 1/10W 2.43K	MKA
R1513	VRJSD6D2201V	MGF CHIP 1/10W 2.2K	MKA
R1514	ERD25FJ100P	10	⚠
	OR ERD25FPJ100P	10	⚠
	OR VRESF4FJ100P	10	⚠
R1515	VRESE2TJ152	1/2W 1.5K	MKA
R1517	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1519	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1520	ERJ6GEYJ331V	MGF CHIP 1/10W 330	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1001	ECKATS103MF	CERAMIC 250V 0.01	⚠
	OR ECKETS103MF	CERAMIC 250V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC 125V 0.01	⚠
	OR VCKST3G103MY	CERAMIC 250V 0.01	⚠
	OR VCKSU3D103MY	CERAMIC 125V 0.01	⚠ MKA
C1002	ECKATS332ME8	CERAMIC 250V 3300P	⚠
	OR ECKDNB332ME8	CERAMIC 125V 3300P	⚠
	OR ECKETS332ME8	CERAMIC 125V 3300P	⚠
	OR VCKSEKD332MY	CERAMIC 125V 3300P	⚠
	OR VCKSEVD332MY	CERAMIC 125V 3300P	⚠
	OR VCKST3G332MX	CERAMIC 250V 3300P	⚠
	OR VCKSU3D332MX	CERAMIC 125V 3300P	⚠ MKA
C1003	ECKATS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR ECKETS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTJG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTLG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSU4D222MX	CERAMIC 125V 2200P	⚠ MKA
	OR VCKSU5D222MX	CERAMIC 125V 2200P	⚠ MKA

Ref. No.	Part No.	Part Name & Description	Remarks
C1004	ECEA2DU121YE	ELECTROLYTIC 200V 120	⚠
	OR VCESAN2D121E	ELECTROLYTIC 200V 120	⚠ MKA
	OR VCESR2D121XE	ELECTROLYTIC 200V 120	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCUSQAE105KB	C CHIP 25V 1	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018	
C1010	ECUV1H102KBN	C CHIP 50V 1000P	
C1011	ECA1HHG470B	ELECTROLYTIC 50V 47	
C1012	ECEA1PEE102	ELECTROLYTIC 18V 1000	
C1013	ECEA1PEE102	ELECTROLYTIC 18V 1000	
C1016	ECEA0JEE122	ELECTROLYTIC 6.3V 1200	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C1019	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1021	ECUV1E104KBN	C CHIP 25V 0.1	
C1025	ECKATS221MB	CERAMIC 125V 220P	⚠ MKA
	OR ECKETS221MB	CERAMIC 125V 0.022	⚠ MKA
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ MKA
	OR VCKSU4D221KW	CERAMIC 125V 220P	⚠ MKA
	OR VCKSU5D221KW	CERAMIC 125V 220P	⚠ MKA
C1026	ECKATS221MB	CERAMIC 125V 220P	⚠ MKA
	OR ECKETS221MB	CERAMIC 125V 0.022	⚠ MKA
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ MKA
	OR VCKSU4D221KW	CERAMIC 125V 220P	⚠ MKA
	OR VCKSU5D221KW	CERAMIC 125V 220P	⚠ MKA
C1027	ECKATS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR ECKETS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTJG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTLG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSU4D222MX	CERAMIC 125V 2200P	⚠ MKA
	OR VCKSU5D222MX	CERAMIC 125V 2200P	⚠ MKA
C1029	ECUV1H101JCN	C CHIP 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C1051	ECEA1CKA100	ELECTROLYTIC 16V 10	
C1055	ECEA1CKA470	ELECTROLYTIC 16V 47	
C1056	ECEA1CKA470	ELECTROLYTIC 16V 47	
C1059	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1060	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1061	ECEA1HKG2R2	ELECTROLYTIC 50V 2.2	MKA
C1062	ECUV1H221KBN	C CHIP 50V 220P	
C1064	ECA1HM220B	ELECTROLYTIC 50V 22	
C1070	ECEA1CKA101	ELECTROLYTIC 16V 100	
C1501	ECKATS221MB	CERAMIC 250V 220P	⚠ MKA

Ref. No.	Part No.	Part Name & Description	Remarks
	OR ECKETS221MB	CERAMIC 250V 220P	⚠ MKA
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ MKA
	OR VCKSU4D221KW	CERAMIC 125V 220P	⚠ MKA
	OR VCKSU5D221KW	CERAMIC 125V 220P	⚠ MKA
C1502	ECKATS103MF	CERAMIC 250V 0.01	⚠
	OR ECKETS103MF	CERAMIC 250V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC 125V 0.01	⚠
	OR VCKST3G103MY	CERAMIC 250V 0.01	⚠
	OR VCKSU3D103MY	CERAMIC 125V 0.01	⚠ MKA
C1503	ECKATS332ME8	CERAMIC 250V 3300P	⚠
	OR ECKDNB332ME8	CERAMIC 125V 3300P	⚠
	OR ECKETS332ME8	CERAMIC 250V 3300P	⚠
	OR VCKSEKD332MY	CERAMIC 125V 3300P	⚠
	OR VCKSEVD332MY	CERAMIC 125V 3300P	⚠
	OR VCKST3G332MX	CERAMIC 250V 3300P	⚠
	OR VCKSU3D332MX	CERAMIC 125V 3300P	⚠ MKA
C1504	ECKATS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR ECKETS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTJG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTLG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSU4D222MX	CERAMIC 125V 2200P	⚠ MKA
	OR VCKSU5D222MX	CERAMIC 125V 2200P	⚠ MKA
C1505	VCYSBRE183KX	CERAMIC 25V 0.018	
C1506	ECEA2DU820YE	ELECTROLYTIC 200V 82	⚠
	OR VCESAN2D820E	ELECTROLYTIC 200V 82	⚠ MKA
	OR VCESR2D820XE	ELECTROLYTIC 200V 82	⚠
C1507	VCUSQAH224KB	C CHIP 50V 0.22	
C1508	ECKW2H221KB5	CERAMIC 500V 220P	
C1509	VCYSBRE183KX	CERAMIC 25V 0.018	
C1510	ECUV1E104KBN	C CHIP 25V 0.1	
C1511	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7	
C1512	ECUV1H102KBN	C CHIP 50V 1000P	
C1513	ECUV1H101JCN	C CHIP 50V 100P	
C1514	ECEA0JEE122	ELECTROLYTIC 6.3V 1200	
C1515	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1516	ECA1HHG470B	ELECTROLYTIC 50V 47	
C1517	ECA1EM331B	ELECTROLYTIC 25V 330	
C1518	ECEA0JEE122	ELECTROLYTIC 6.3V 1200	
C1520	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1521	ECUV1H270JCN	C CHIP 50V 27P	
C1522	ECUV1E104KBN	C CHIP 25V 0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C1523	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C1528	ECEA1PEE102	ELECTROLYTIC 18V 1000	
C1529	ECKATS221MB	CERAMIC 125V 220P	⚠ MKA
	OR ECKETS221MB	CERAMIC 125V 0.022	⚠ MKA
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ MKA
	OR VCKSU4D221KW	CERAMIC 125V 220P	⚠ MKA
	OR VCKSU5D221KW	CERAMIC 125V 220P	⚠ MKA
C1530	ECKATS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR ECKETS222ME	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTJG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSTLG222MX	CERAMIC 250V 2200P	⚠ MKA
	OR VCKSU4D222MX	CERAMIC 125V 2200P	⚠ MKA
	OR VCKSU5D222MX	CERAMIC 125V 2200P	⚠ MKA

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF15N005A	LINE FILTER 0.5A 18M	⚠
	OR LSLQ0287	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
	OR VLQS0170	LINE FILTER 0.6A 18M	⚠
L1002	VLQS0165	22UH	
L1003	VLQS0164	9	MKA
L1006	VLPS0005A	BEAD INDUCTOR	
L1009	ERDS2TJ102	1K	
L1501	ELF15N005A	LINE FILTER 0.5A 18M	⚠
	OR LSLQ0287	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
	OR VLQS0170	LINE FILTER 0.6A 18M	⚠
L1504	VLQS0164	9	MKA
L1505	VLQSAB7D220K	22	
L1506	VLPS0005A	BEAD INDUCTOR	
L1507	LSLF0034	EMI FILTER CHIP	MKA
L1509	LSLF0034	EMI FILTER CHIP	MKA
L1510	BK1608LM252T	BEAD INDUCTOR CHIP 2.5K	MKA
L1511	ELESN220KA	22	
L1512	LSLF0035	EMI FILTER CHIP	MKA

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1001	LSJP0814	CONNECTOR 2P	MKA
P1002	VJPS0546	CONNECTOR 13P	MKA
P1003	VJPS0279	9P	
P1501	VJSS0874	CONNECTOR 11P	
P1503	VEKS5801	CONNECTOR CABLE W/PLUG,DC12V	MKA

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0032B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
F1501	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0032B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	LSSF009A35E	IC PROTECTOR	⚠ MKA
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR LSSF009A25E	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1003	LSSF009AR37E	IC PROTECTOR 1.5A	⚠
PR1501	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR LSSF009A25E	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1502	LSSF009A35E	IC PROTECTOR	⚠ MKA

RELAY

Ref. No.	Part No.	Part Name & Description	Remarks
RL1501	LSSY0004	RELAY	⚠ MKA
	OR TSEH0005	RELAY,120V	⚠
	OR TSEH0013	RELAY	⚠ MKA
	OR TSEH1860-1	REALY	⚠ MKA
	OR TSEH8007	RELAY,120V	⚠ MKA

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	ETS28AD1F5AC		⚠
	OR ETS28AD1F5NC		⚠
	OR VTPS0040		⚠
	OR VTPS0040-1		⚠
T1501	ETS28AD2M5AC		⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
482	XNG3	NUT,STEEL	
483	XYN3+F10S	SCREW W/WASHER,STEEL	
771	EYF52BC	FUSE HOLDER	
772	LSSC0408	HEAT SINK	MKA
773	VSCS1072	HEAT SINK PLATE,STEEL	

12.3.12. OPERATION C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC4701	UPC4570G	IC, LINEAR	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4591	RD9.1EW	ZENER 9.1V	
D4592	RD9.1EW	ZENER 9.1V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4591	ERDS2TJ681	680	
R4592	ERDS2TJ681	680	
R4593	ERDS2TJ681	680	
R4594	ERDS2TJ681	680	
R4701	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4702	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4703	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4704	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4710	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R6382	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6383	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6384	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4701	ECUV1H101JCN	C CHIP 50V 100P	
C4702	ECUV1H101JCN	C CHIP 50V 100P	
C4703	ECUV1H103ZFN	C CHIP 50V 0.01	
C4704	ECUV1H103ZFN	C CHIP 50V 0.01	
C4705	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4706	ECEA1CKA100	ELECTROLYTIC 16V 10	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L4701	ELESN101KA	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4591	VJPS0275	CONNECTOR 5P	
P4701	VJPS0772	CONNECTOR PLUG 19P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6383	EVQ21405R	PUSH SWITCH	
SW6384	EVQ21405R	PUSH SWITCH	
SW6385	EVQ21405R	PUSH SWITCH	
SW6386	EVQ21405R	PUSH SWITCH	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK4591	LJP28006A	EARPHONE JACK SOCKET	MKA
JK4702	LSJJ0168	FRONT AUDIO/VIDEO JACK SOCKET	MKA

12.3.13. DVD DECODER C.B.A

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC8000	ES4318F	IC, 32BIT MICROCONTROLLER	E.S.D.
IC8001	AT24C04N10SI	IC, 4K EEP ROM	E.S.D.
	OR S-24C04A	IC, 4K EEP ROM	E.S.D.
IC8002	TC74HCT374AF	IC, CMOS STANDARD LOGIC	E.S.D.
IC8003	S816A36AMC	IC, LINEAR	
IC8100	KM16V16SDT8	IC, 16MBIT SD RAM	E.S.D.
	OR MSM56V1616F8	IC, 16MBIT SD RAM	E.S.D.
	OR MT16V16SAT7S	IC, 16MBIT SD RAM	E.S.D.
	OR MSM56V16F8FM	IC, 16MBIT SD RAM	E.S.D.
IC8101	KM16V16SDT8	IC, 16MBIT SD RAM	E.S.D.
	OR MSM56V1616F8	IC, 16MBIT SD RAM	E.S.D.
	OR MT16V16SAT7S	IC, 16MBIT SD RAM	E.S.D.
	OR MSM56V16F8FM	IC, 16MBIT SD RAM	E.S.D.
IC8200	ADV7170KSU	IC, LINEAR	
IC8201	S816A36AMC	IC, LINEAR	
IC8301	AT49F04090TC	IC, 4MBIT FLASH MEMORY	E.S.D.
IC8303	S80845ANMP	IC, LINEAR	
IC8401	AN6552S-E1	IC, LINEAR	
IC8403	PCM1723E-2K	IC, LINEAR	
IC8502	TC74VHC125FT	IC, CMOS STANDARD LOGIC	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q8000	2SB956(R)	CHIP	
Q8200	2SB1218A(R)	CHIP	
Q8201	2SB1218A(R)	CHIP	
Q8202	2SB1218A(R)	CHIP	
Q8203	2SB956(R)	CHIP	
Q8204	2SB1218A(R)	CHIP	
Q8205	2SB1218A(R)	CHIP	
Q8206	2SB1218A(R)	CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D8000	MA3051-M		
D8001	MA3051-M		
D8002	MA3051-M		
D8003	MA3051-M		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R8008	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8009	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8010	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8011	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8012	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8013	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8016	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8017	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8018	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8019	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8020	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8021	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8022	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8023	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8024	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8025	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8026	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8027	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8028	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8029	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8030	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8031	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8032	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8033	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8034	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8035	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8036	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8037	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8038	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8039	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8040	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8041	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8042	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8043	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8045	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8049	ERJ1WYJ1R0U	MGF CHIP 1W 1	
R8050	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8051	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8052	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8053	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8054	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8055	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8056	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8057	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8058	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8059	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8060	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8061	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8062	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8063	ERJ3GEY0R00V	MGF CHIP 1/16W 0	

Ref. No.	Part No.	Part Name & Description	Remarks
R8064	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8065	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8066	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8068	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8069	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8076	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8077	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8082	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8083	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8084	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8085	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8086	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8087	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8088	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8089	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8090	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8091	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8092	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8093	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8094	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8095	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8096	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8097	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8098	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8099	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8101	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8102	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8103	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8104	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8105	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8106	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8107	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8108	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8109	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8110	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8111	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8112	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8113	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8114	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8115	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8116	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8117	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8118	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8119	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8120	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8121	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8122	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8123	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8124	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8125	ERJ3GEYJ330V	MGF CHIP 1/16W 33	

Ref. No.	Part No.	Part Name & Description	Remarks
R8126	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8127	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8128	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8129	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8130	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8131	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8132	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8133	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8134	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8135	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8136	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8137	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8138	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8143	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8144	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8145	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8146	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8147	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8148	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8149	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8150	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8151	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8152	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8153	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8154	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8155	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8156	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8157	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8158	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8159	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8160	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8161	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8162	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8163	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8164	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8165	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8166	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8167	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8168	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8169	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8170	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8171	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8172	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8173	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8174	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8203	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8204	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8205	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8206	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R8207	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	

Ref. No.	Part No.	Part Name & Description	Remarks
R8208	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R8209	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8210	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8211	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8212	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8213	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8214	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8215	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8216	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8217	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8218	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8221	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8222	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8223	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8224	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8225	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R8229	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8230	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8231	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8232	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8233	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8234	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8238	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8239	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8240	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8242	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8253	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8254	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8255	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8293	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8294	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8299	EVM3YSX50B23	ARIABLE 2K	
R8300	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8302	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8309	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8310	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8311	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8312	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8313	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8314	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8315	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8316	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8317	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8318	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8319	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8320	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8321	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8322	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8323	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8324	ERJ2GEJ330X	MGF CHIP 1/16W 33	

Ref. No.	Part No.	Part Name & Description	Remarks
R8325	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8326	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8327	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8328	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8329	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8330	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8331	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8332	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8333	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8334	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8335	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8336	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8337	ERJ2GEJ330X	MGF CHIP 1/16W 33	
R8403	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8404	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8405	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8406	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8407	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R8408	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R8409	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R8410	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R8411	ERJ3EKF1502V	MGF CHIP 1/16W 15K	
R8412	ERJ3EKF1502V	MGF CHIP 1/16W 15K	
R8413	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R8414	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R8417	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8418	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8419	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8420	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8421	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8422	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8423	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8425	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8427	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8428	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8429	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8430	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8431	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8432	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8433	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8434	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8435	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8438	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8440	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8443	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8445	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8447	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8448	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8501	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8502	ERJ3GEYJ331V	MGF CHIP 1/16W 330	

Ref. No.	Part No.	Part Name & Description	Remarks
R8503	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8504	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8505	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8506	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8507	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8508	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8509	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8510	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8511	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8512	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8513	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8514	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8600	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8601	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8602	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8603	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8604	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8605	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8606	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8607	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8608	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8609	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8610	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8611	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8612	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8613	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8614	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8615	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8616	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8617	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8618	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8619	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8620	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8621	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8622	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8623	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8624	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8625	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8626	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8627	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8628	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8629	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8630	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8631	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8632	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8633	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8634	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8635	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8636	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8637	ERJ2GEJ220X	MGF CHIP 1/16W 22	

Ref. No.	Part No.	Part Name & Description	Remarks
R8638	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8639	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8640	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8641	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8642	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8643	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8644	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8645	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8646	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8647	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8648	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8649	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8650	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8651	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8652	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8653	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8654	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8655	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8656	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8657	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8658	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8659	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8660	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8661	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8662	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8663	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8664	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8665	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8666	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8667	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8668	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8669	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8670	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8671	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8672	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8673	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8674	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8675	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8676	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8677	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8678	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8679	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8680	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8681	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8682	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8683	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8684	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8685	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8686	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8687	ERJ2GEJ220X	MGF CHIP 1/16W 22	

Ref. No.	Part No.	Part Name & Description	Remarks
R8688	ERJ2GEJ220X	MGF CHIP 1/16W 22	
R8689	ERJ2GEJ220X	MGF CHIP 1/16W 22	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C8000	ECUV1C104ZFV	C CHIP 16V 0.1	
C8001	ECUV1C104ZFV	C CHIP 16V 0.1	
C8002	ECUV1C104ZFV	C CHIP 16V 0.1	
C8003	ECUV1C104ZFV	C CHIP 16V 0.1	
C8004	ECUV1C104ZFV	C CHIP 16V 0.1	
C8005	ECUV1C104ZFV	C CHIP 16V 0.1	
C8006	ECUV1C104ZFV	C CHIP 16V 0.1	
C8007	ECUV1C104ZFV	C CHIP 16V 0.1	
C8008	ECUV1C104ZFV	C CHIP 16V 0.1	
C8009	ECUV1C104ZFV	C CHIP 16V 0.1	
C8010	ECUV1C104ZFV	C CHIP 16V 0.1	
C8011	ECUV1C104ZFV	C CHIP 16V 0.1	
C8012	ECUV1C104ZFV	C CHIP 16V 0.1	
C8013	ECUV1C104ZFV	C CHIP 16V 0.1	
C8014	ECUV1C104ZFV	C CHIP 16V 0.1	
C8015	ECUV1C104ZFV	C CHIP 16V 0.1	
C8016	ECUV1C104ZFV	C CHIP 16V 0.1	
C8017	ECUV1C104ZFV	C CHIP 16V 0.1	
C8018	ECUV1C104ZFV	C CHIP 16V 0.1	
C8019	ECUV1C104ZFV	C CHIP 16V 0.1	
C8020	ECUV1C104ZFV	C CHIP 16V 0.1	
C8021	ECUV1C104ZFV	C CHIP 16V 0.1	
C8022	ECUV1C104ZFV	C CHIP 16V 0.1	
C8023	ECUV1C104ZFV	C CHIP 16V 0.1	
C8025	ECUV1H151JCN	C CHIP 50V 150P	
C8026	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8027	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100	
C8034	ECEV0JA331	ELECTROLYTIC CHIP 6.3V 330	
C8041	ECUV1C104ZFV	C CHIP 16V 0.1	
C8042	ECEV1AA470WR	ELECTROLYTIC 10V 47	
C8043	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100	
C8044	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100	
C8045	ECUV1C104ZFV	C CHIP 16V 0.1	
C8047	ECUV1C104ZFV	C CHIP 16V 0.1	
C8048	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8049	ECEV1AA470WR	ELECTROLYTIC 10V 47	
C8050	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100	
C8051	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100	
C8054	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100	
C8056	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47	
C8058	ECUV1C104ZFV	C CHIP 16V 0.1	
C8106	ECUV1C104ZFV	C CHIP 16V 0.1	
C8107	ECUV1C104ZFV	C CHIP 16V 0.1	
C8109	ECUV1C104ZFV	C CHIP 16V 0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C8110	ECUV1C104ZFV	C CHIP 16V 0.1	
C8111	ECUV1C104ZFV	C CHIP 16V 0.1	
C8112	ECUV1C104ZFV	C CHIP 16V 0.1	
C8113	ECUV1C104ZFV	C CHIP 16V 0.1	
C8114	ECUV1C104ZFV	C CHIP 16V 0.1	
C8116	ECUV1C104ZFV	C CHIP 16V 0.1	
C8117	ECUV1C104ZFV	C CHIP 16V 0.1	
C8118	ECUV1C104ZFV	C CHIP 16V 0.1	
C8119	ECUV1C104ZFV	C CHIP 16V 0.1	
C8201	ECUV1C104ZFV	C CHIP 16V 0.1	
C8202	ECUV1C104ZFV	C CHIP 16V 0.1	
C8203	ECUV1C104ZFV	C CHIP 16V 0.1	
C8206	ECUV1C104ZFV	C CHIP 16V 0.1	
C8207	ECUV1C104ZFV	C CHIP 16V 0.1	
C8208	ECUV1C104ZFV	C CHIP 16V 0.1	
C8209	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8210	ECUV1C104ZFV	C CHIP 16V 0.1	
C8211	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100	
C8215	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47	
C8219	ECUV1C104ZFV	C CHIP 16V 0.1	
C8220	ECUV1C104ZFV	C CHIP 16V 0.1	
C8221	ECUV1C104ZFV	C CHIP 16V 0.1	
C8222	ECUV1C104ZFV	C CHIP 16V 0.1	
C8223	ECUV1C104ZFV	C CHIP 16V 0.1	
C8224	ECUV1C104ZFV	C CHIP 16V 0.1	
C8225	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8226	ECUV1C104ZFV	C CHIP 16V 0.1	
C8227	ECEV1AA470WR	ELECTROLYTIC 10V 47	
C8228	ECUV1H390JCV	C CHIP 50V 39P	
C8229	ECUV1H390JCV	C CHIP 50V 39P	
C8230	ECUV1H220JCV	C CHIP 50V 22P	
C8231	ECUV1H390JCV	C CHIP 50V 39P	
C8232	ECUV1H390JCV	C CHIP 50V 39P	
C8233	ECUV1H220JCV	C CHIP 50V 22P	
C8234	ECUV1H390JCV	C CHIP 50V 39P	
C8235	ECUV1H390JCV	C CHIP 50V 39P	
C8236	ECUV1H220JCV	C CHIP 50V 22P	
C8238	ECUV1H220JCV	C CHIP 50V 22P	
C8239	ECUV1H220JCV	C CHIP 50V 22P	
C8240	ECUV1H220JCV	C CHIP 50V 22P	
C8241	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47	
C8243	ECUV1H103ZFV	C CHIP 50V 0.01	
C8244	ECUV1H103ZFV	C CHIP 50V 0.01	
C8245	ECUV1H103ZFV	C CHIP 50V 0.01	
C8246	ECUV1H103ZFV	C CHIP 50V 0.01	
C8247	ECUV1H103ZFV	C CHIP 50V 0.01	
C8248	ECUV1H103ZFV	C CHIP 50V 0.01	
C8249	ECUV1H103ZFV	C CHIP 50V 0.01	
C8250	ECUV1H103ZFV	C CHIP 50V 0.01	
C8251	ECUV1H103ZFV	C CHIP 50V 0.01	

Ref. No.	Part No.	Part Name & Description	Remarks
C8252	ECUV1H103ZFV	C CHIP 50V 0.01	
C8253	ECUV1H103ZFV	C CHIP 50V 0.01	
C8301	ECUV1C104ZFV	C CHIP 16V 0.1	
C8302	ECUV1A105ZFV	C CHIP 10V 1	
C8303	ECUV1C104ZFV	C CHIP 16V 0.1	
C8403	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8404	ECEV1CA101	ELECTROLYTIC CHIP 16V 100	
C8405	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8406	ECUV1C104ZFV	C CHIP 16V 0.1	
C8407	ECEV1EA330SP	ELECTROLYTIC CHIP 25V 33	
C8408	ECEV1EA330SP	ELECTROLYTIC CHIP 25V 33	
C8409	ECUV1H101JCV	C CHIP 50V 100P	
C8410	ECUV1H101JCV	C CHIP 50V 100P	
C8411	ECUV1H102KBV	C CHIP 50V 1000P	
C8412	ECUV1H102KBV	C CHIP 50V 1000P	
C8414	ECUV1H472KBV	C CHIP 50V 4700P	
C8416	ECUV1H472KBV	C CHIP 50V 4700P	
C8421	ECUV1H330JCV	C CHIP 50V 33P	
C8425	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10	
C8426	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10	
C8429	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8430	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8431	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8432	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10	
C8433	ECEV1AA470WR	ELECTROLYTIC 10V 47	
C8437	ECUV1C104ZFV	C CHIP 16V 0.1	
C8438	ECUV1C104ZFV	C CHIP 16V 0.1	
C8439	ECUV1C104ZFV	C CHIP 16V 0.1	
C8440	ECUV1C104ZFV	C CHIP 16V 0.1	
C8442	ECEV1AA470WR	ELECTROLYTIC 10V 47	
C8443	ECUV1C104ZFV	C CHIP 16V 0.1	
C8507	ECUV1H330JCV	C CHIP 50V 33P	
C8508	ECUV1H330JCV	C CHIP 50V 33P	
C8509	ECUV1H330JCV	C CHIP 50V 33P	
C8510	ECUV1H330JCV	C CHIP 50V 33P	
C8511	ECUV1H330JCV	C CHIP 50V 33P	
C8513	ECUV1C104ZFV	C CHIP 16V 0.1	
C8514	ECUV1C104ZFV	C CHIP 16V 0.1	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL8000	LSLF0014	EMI FILTER CHIP	
FL8001	LSLF0014	EMI FILTER CHIP	
FL8002	LSLF0014	EMI FILTER CHIP	
FL8003	LSLF0014	EMI FILTER CHIP	
FL8200	LSLF0014	EMI FILTER CHIP	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L8000	LSLF0027		
L8002	LSLF0030		
L8003	LSLF0030		
L8004	LSLF0030		
L8005	LSLF0030		
L8006	LSLF0030		
L8007	LSLF0030		
L8009	LSLF0008	LOW PASS FILTER	
L8010	LSLF0008	LOW PASS FILTER	
L8011	LSLF0033		
L8012	LSLF0033		
L8013	LSLF0033		
L8017	LSLF0006	LOW PASS FILTER	
L8018	LSLF0030		
L8020	LSLF0030		
L8021	LSLF0061	EMI FILTER CHIP	
L8022	LSLF0027		
L8023	LSLF0015	EMI FILTER CHIP	
L8102	LSLF0015	EMI FILTER CHIP	
L8103	LSLF0015	EMI FILTER CHIP	
L8200	LSLF0015	EMI FILTER CHIP	
L8204	LSLF0030		
L8205	LSLF0030		
L8206	LSLF0030		
L8207	LSLF0027		
L8210	LSLF0006	LOW PASS FILTER	
L8212	LSLF0063	INDUCTOR CHIP	
L8213	LSLF0064	INDUCTOR CHIP	
L8214	LSLF0063	INDUCTOR CHIP	
L8215	LSLF0063	INDUCTOR CHIP	
L8216	LSLF0064	INDUCTOR CHIP	
L8217	LSLF0063	INDUCTOR CHIP	
L8218	LSLF0063	INDUCTOR CHIP	
L8219	LSLF0064	INDUCTOR CHIP	
L8220	LSLF0063	INDUCTOR CHIP	
L8222	LSLF0015	EMI FILTER CHIP	
L8223	LSLF0015	EMI FILTER CHIP	
L8300	LSLF0006	LOW PASS FILTER	
L8400	LSLF0030		
L8401	LSLF0030		
L8402	LSLF0032		
L8410	LSLF0030		
L8411	LSLF0030		
L8415	LSLF0006	LOW PASS FILTER	
L8416	LSLF0006	LOW PASS FILTER	
L8417	LSLF0006	LOW PASS FILTER	
L8506	LSLF0069	INDUCTOR CHIP	
L8507	LSLF0069	INDUCTOR CHIP	
L8508	LSLF0069	INDUCTOR CHIP	
L8511	LSLF0015	EMI FILTER CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
L8512	LSLF0069	INDUCTOR CHIP	
L8513	LSLF0069	INDUCTOR CHIP	
L8550	LSLF0006	LOW PASS FILTER	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X8501	VSXS0240		MKA

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P8001	VJPS0770	CONNECTOR 11P	
P8002	VJPS0770	CONNECTOR 11P	
P8003	VJPS0770	CONNECTOR 11P	
P8004	LSJS0040	CONNECTOR 40P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
168	VZFS0006	CLAMPER	
791	VEKS5773	CONNECTOR CABLE W/PLUG,DC 5V	
792	VEKS5812	CONNECTOR CABLE W/PLUG,0V	

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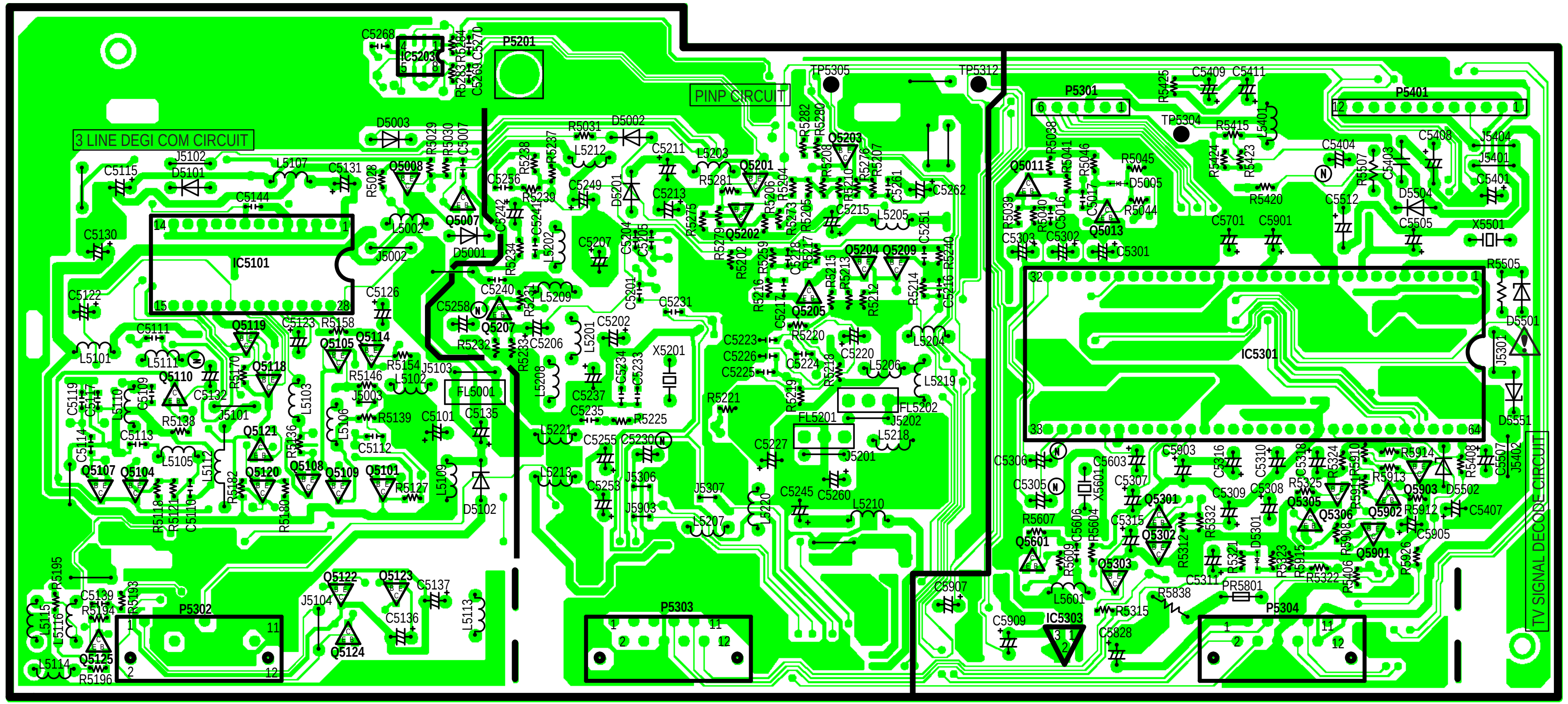
TV PROCESS C.B.A. VEPS3090B (A) / VEPS3090A (B)

(COMPONENT SIDE)


3 LINE DEGI COM CIRCUIT
PINP CIRCUIT
TV SIGNAL DECODE CIRCUIT
IC5101
IC5301
IC5303
IC5203
P5201
P5301
P5401
P5302
P5303
P5304
TP5305
TP5312
TP5304

(DUAL PATTERNS)

VJBS3090

COMPARISON CHART
OF MODELS & MARKS

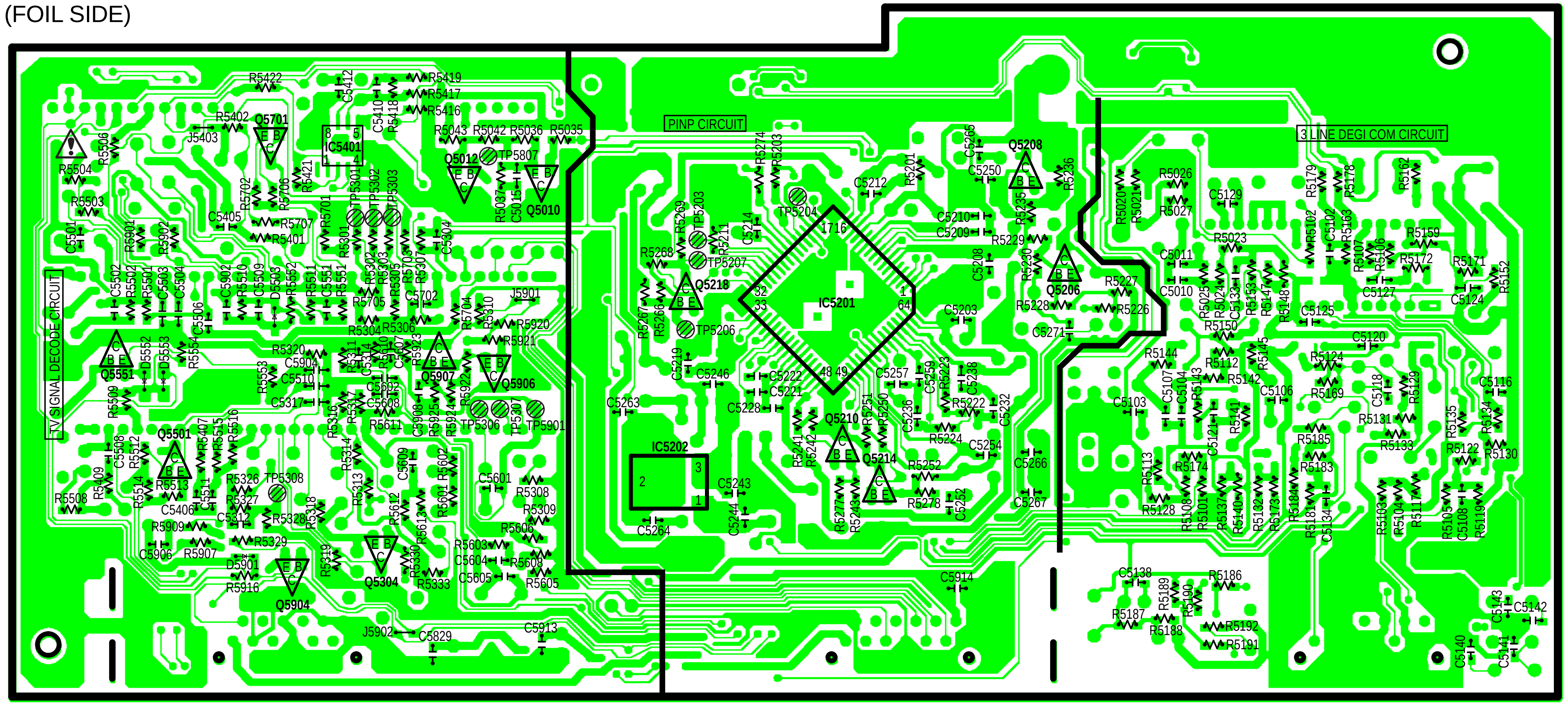
MODEL	MARK
Not Used	A
PV-DF2700-K	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

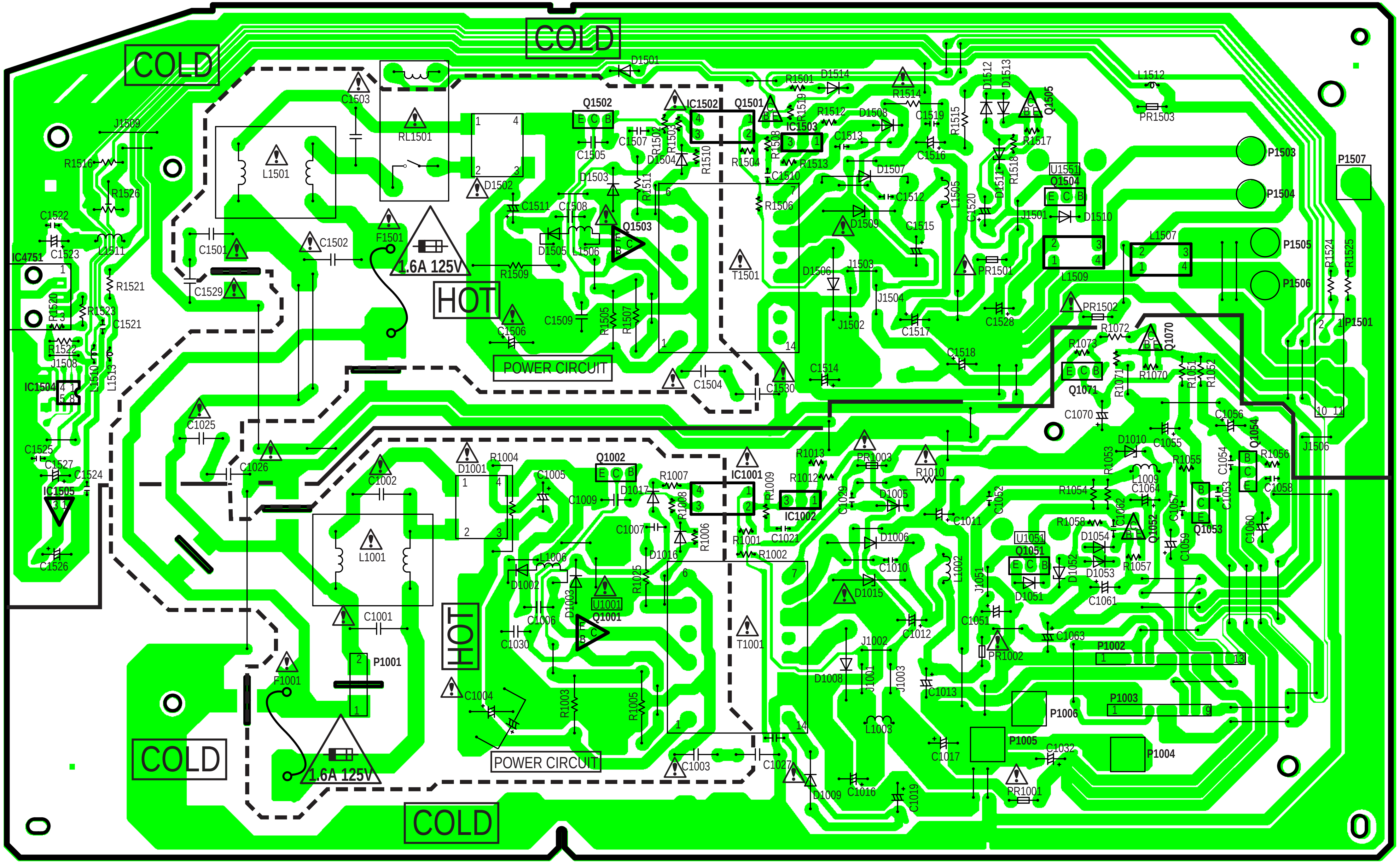
(FOIL SIDE)


PINP CIRCUIT
3 LINE DEGI COM CIRCUIT
TV SIGNAL DECODE CIRCUIT
IC5201
IC5202
IC5401
Q5208
Q5206
Q5218
Q5210
Q5214
Q5701
Q5012
Q5010
Q5551
Q5501
Q5907
Q5906
Q5304
Q5904

(DUAL PATTERNS)

VJBS3090

POWER SUPPLY C.B.A. VEPS1020A


COLD
COLD
HOT
1.6A 125V
POWER CIRCUIT
T1501
L1501
RL1501
F1501
Q1501
Q1502
Q1503
Q1504
Q1505
IC1502
IC1503
IC4751
IC1504
IC1505
P1503
P1504
P1505
P1506
P1507
P1501
J1501
J1506
L1509
L1507
Q1070
Q1071
COLD
HOT
1.6A 125V
POWER CIRCUIT
T1001
L1001
F1001
P1001
Q1001
Q1002
IC1001
IC1002
U1001
U1051
Q1051
Q1052
Q1053
Q1054
P1002
P1003
P1004
P1005
P1006
COLD
COLD

HOT CIRCUIT.BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

VJBS1020

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

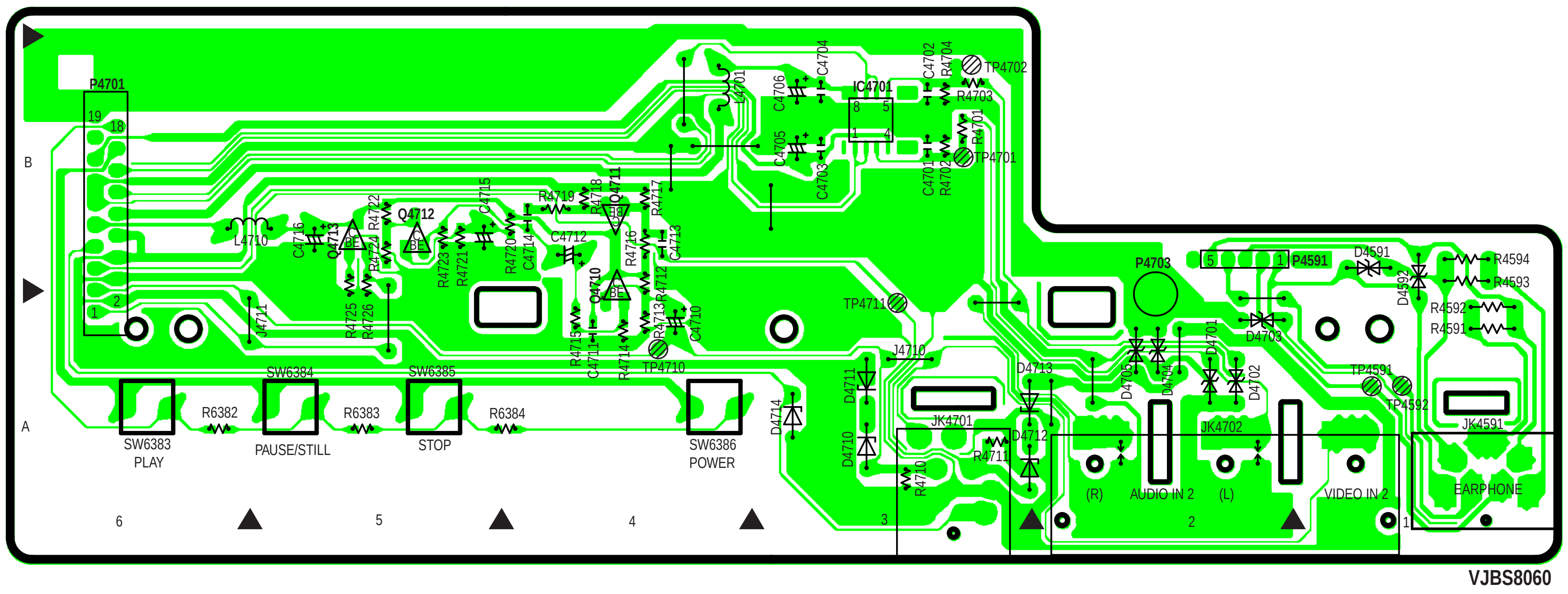
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:THE VOLTAGE FOR PARTS IN HOT CIRCUIT
IS MEASURED USING POWER HEAT SINK
AS A COMMON TERMINAL.

OPERATION C.B.A. VEPS8060A

NOTE:

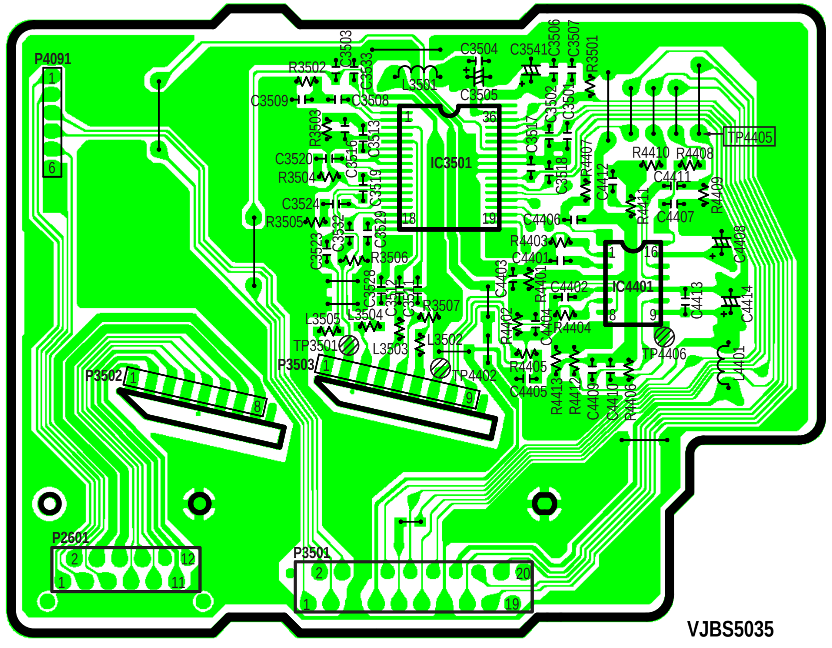
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.


P4701
IC4701
TP4702
TP4701
Q4712
Q4713
Q4711
Q4710
L4710
L4701
TP4711
TP4710
P4703
P4591
D4591
D4592
D4703
D4701
D4702
D4713
D4712
D4711
D4710
D4714
J4710
TP4591
TP4592
JK4701
JK4702
JK4591
SW6383
PLAY
SW6384
PAUSE/STILL
SW6385
STOP
SW6386
POWER
R6382
R6383
R6384
(R)
AUDIO IN 2
(L)
VIDEO IN 2
EARPHONE
A
B
6
5
4
3
2
1
VJBS8060

Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. VEPS5035Z

NOTE:

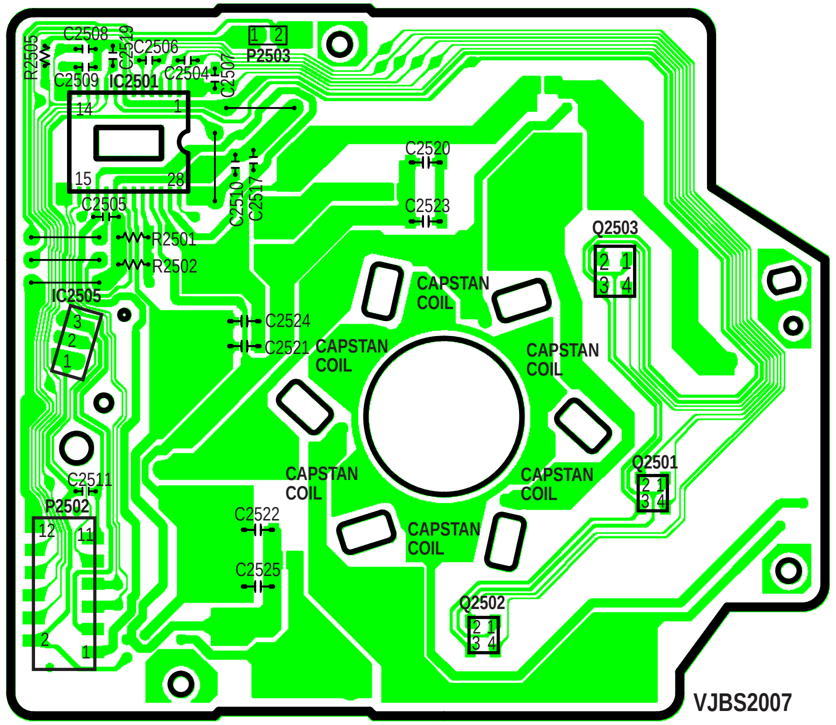
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.


P4091
IC3501
IC4401
L3501
L3502
L3503
L3504
L3505
TP3501
TP4402
TP4405
TP4406
L4401
P3502
P3503
P2501
P3501
VJBS5035

NOTE:

FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

CAPSTAN STATOR C.B.A. VEMS0331


P2503
IC2501
IC2505
P2502
Q2503
Q2501
Q2502
C2508
C2506
C2509
C2504
C2507
C2505
C2510
C2517
C2520
C2523
C2524
C2521
C2511
C2522
C2525
R2505
R2501
R2502
CAPSTAN COIL
CAPSTAN COIL
CAPSTAN COIL
CAPSTAN COIL
CAPSTAN COIL
CAPSTAN COIL
VJBS2007

NOTE:

CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

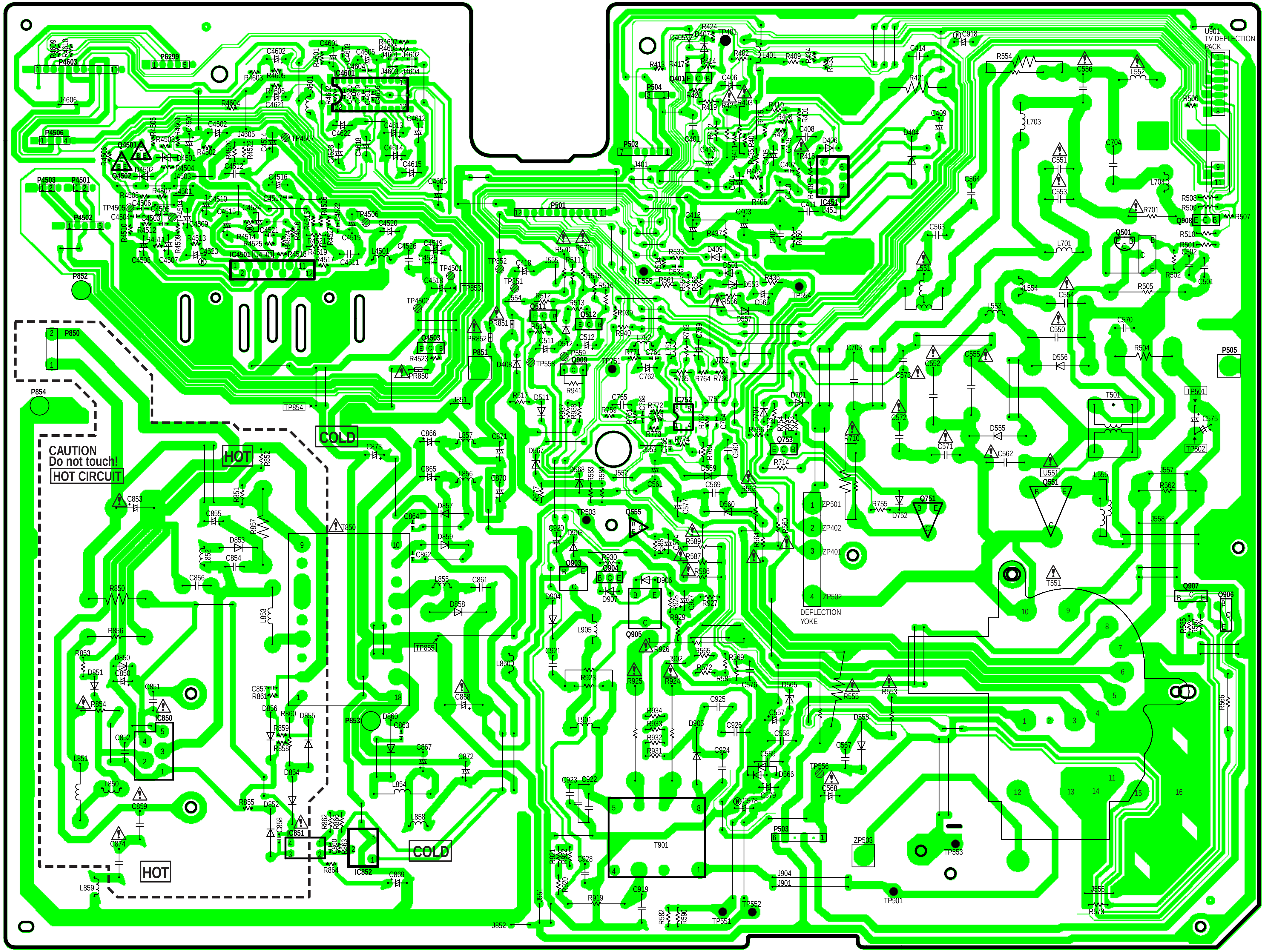
NOTE:

WHEN INSTALLING THE IC2501(AN3846SC) OR CAPSTAN STATOR C.B.A.,
BE SURE TO APPLY SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR C.B.A."
OF MACHANISM SECTION IN DISASSEMBLY/ASSEMBLY PROCEDURES.

NOTE:

THE FOLLOWING PARTS ON THE CAPSTAN STATOR C.B.A. ARE NOT SUPPLIED SEPARATELY.
PLEASE ORDER AND REPLACE WITH THE CIRCUIT BOARD ASSEMBLY INSTEAD OF INDIVIDUAL PARTS.
(Q2501, Q2502, Q2503, CAPSTAN COIL)

TV MAIN C.B.A. LRP61013B (A) / LRP61013A (B)


U901 TV DEFLECTION PACK
CAUTION
Do not touch!
HOT CIRCUIT
HOT
COLD
HOT
COLD
DEFLECTION YOKE
T901
T501
LRP61013

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

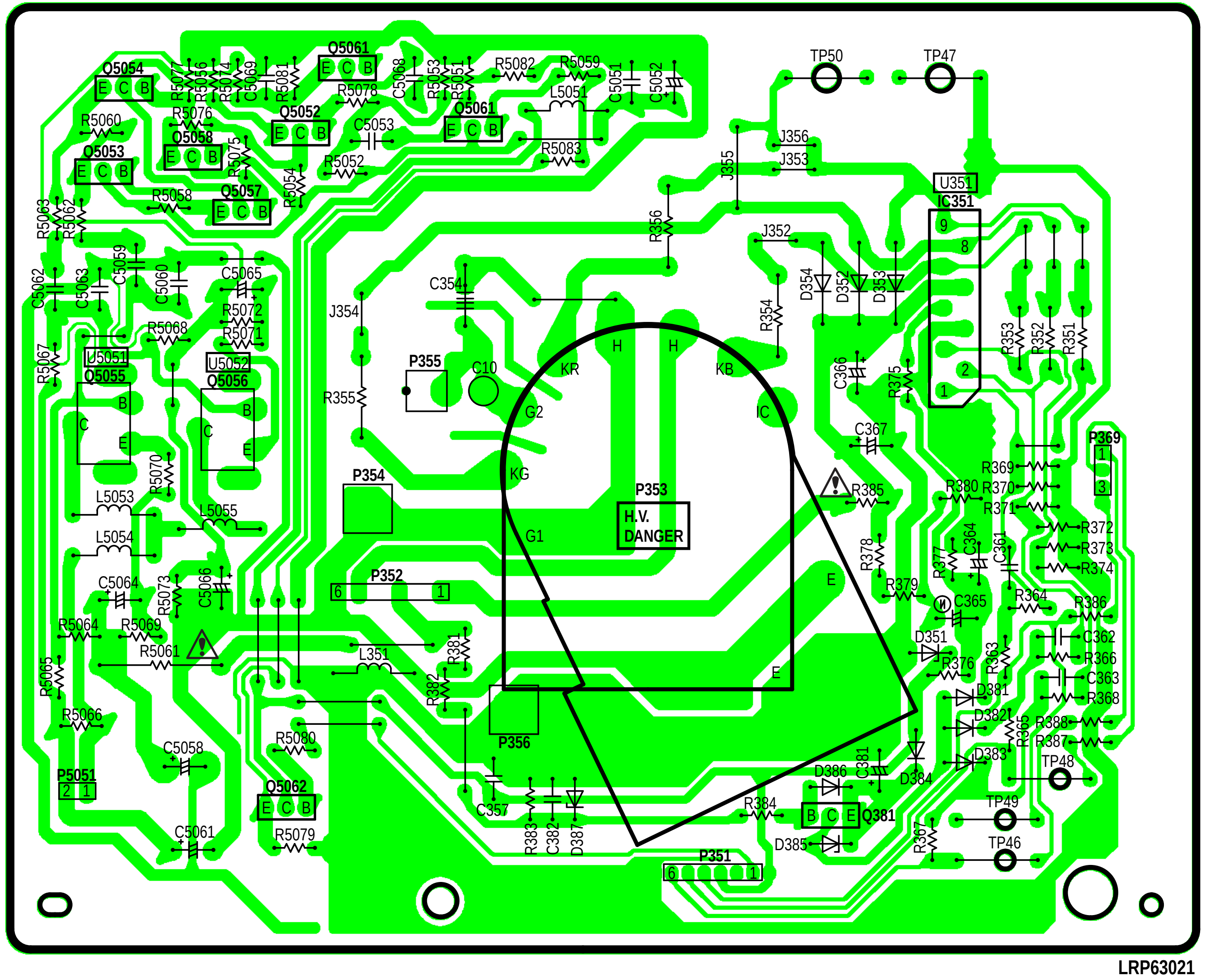
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING POWER HEAT SINK AS A COMMON TERMINAL.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

CRT C.B.A. LRP63021B (A) / LRP63021A (B)

CAUTION: WHEN SERVICING THIS C.B.A.,AVOID TOUCHING HIGH VOLTAGE COMPONENTS.


Q5061
Q5054
Q5052
Q5053
Q5058
Q5057
Q5055
Q5056
U5051
U5052
Q5062
P5051
TP50
TP47
J356
J353
J355
J352
J354
U351
IC351
C354
P355
C10
P354
P353
H.V. DANGER
P352
L351
P356
P351
Q381
D351
D352
D353
D354
D381
D382
D383
D384
D385
D386
P369
TP48
TP49
TP46
R369
R370
R371
R372
R373
R374
R380
R385
R386
R387
R388
C362
C363
C365
C366
C367
R5059
R5060
R5082
R5083
L5051
L5053
L5054
L5055
C5058
C5061
R5079
R5080
LRP63021

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B

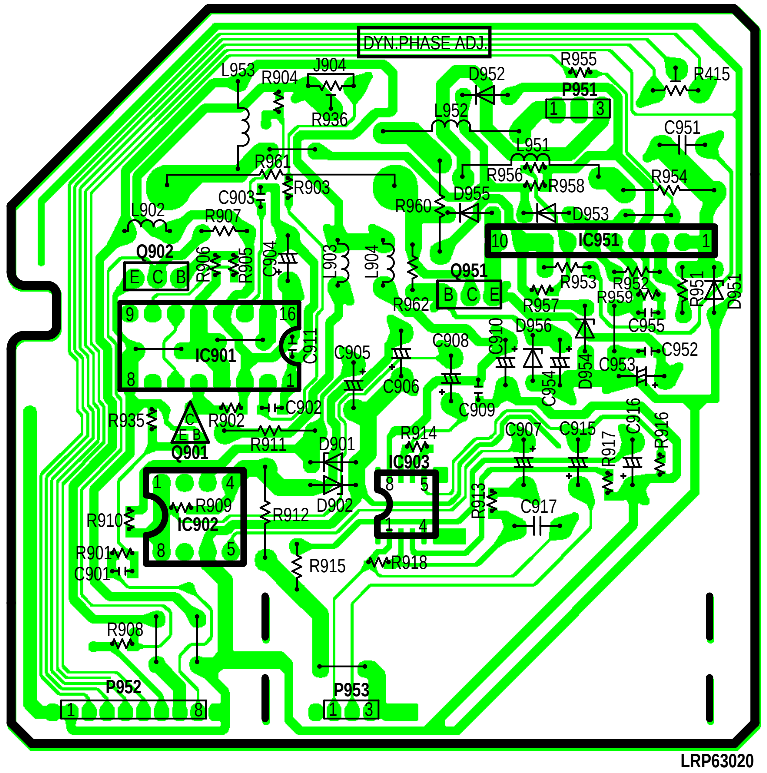
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

DEFLECTION C.B.A. LRP63020A (B)


DYN.PHASE ADJ.
R955
L953
R904
J904
D952
P951
1
3
R415
R936
L952
C951
L951
R961
R956
R958
R954
R903
D955
C903
R960
D953
L902
R907
10
IC951
1
Q902
R906
R905
C904
L903
L904
R953
E
C
B
Q951
B
C
E
R952
R951
D951
R959
R962
R957
9
16
D956
C955
IC901
C911
C905
C908
C910
C952
8
1
C906
D954
C953
C954
C909
R935
R902
C902
R914
C907
C915
C916
Q901
R911
D901
IC903
R917
R916
1
4
8
5
R909
R912
D902
R913
R910
IC902
1
4
C917
8
5
R901
R915
R918
C901
R908
P952
1
8
P953
1
3
LRP63020

COMPARISON CHART
OF MODELS & MARKS

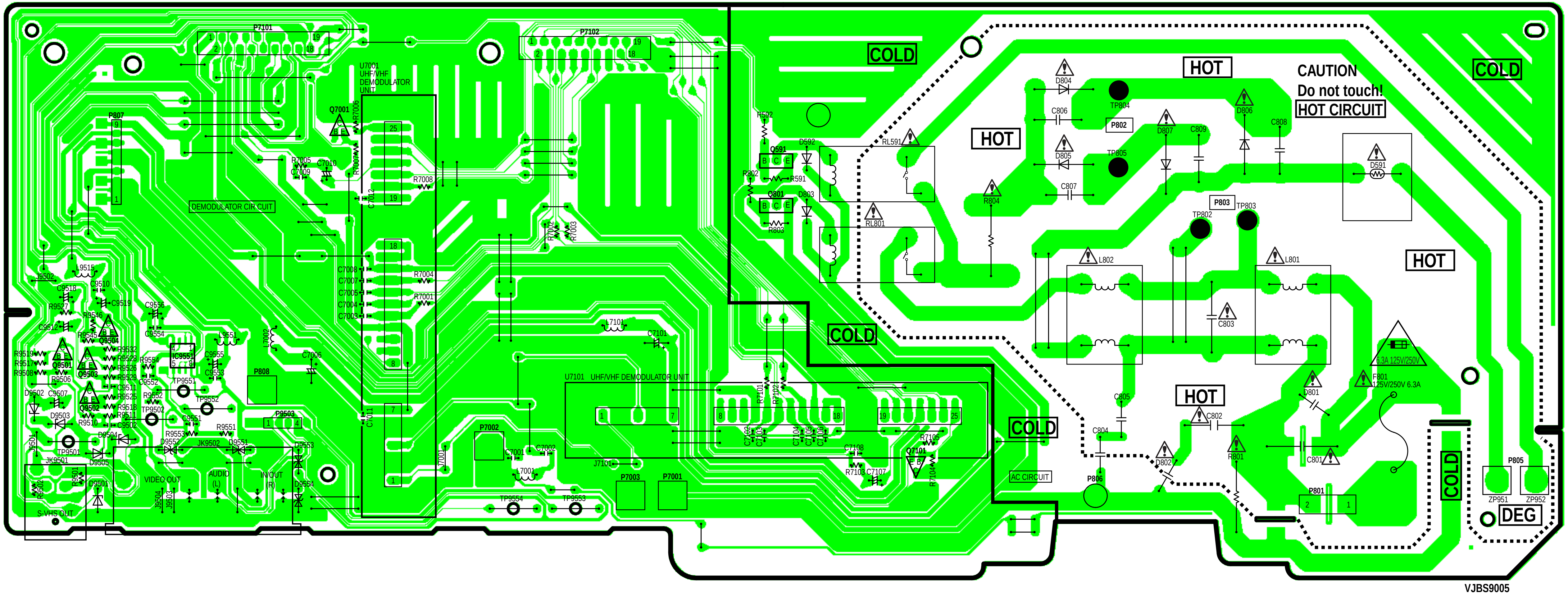
MODEL	MARK
Not Used	A
PV-DF2700-K	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

TUNER MAIN C.B.A. VEPS9005B (A) / VEPS9005A (B)

HOT CIRCUIT.BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COLD
HOT
CAUTION
Do not touch!
HOT CIRCUIT
COLD
HOT
COLD
HOT
COLD
COLD
DEG
P7101
P7102
U7001 UHF/VHF DEMODULATOR UNIT
DEMODULATOR CIRCUIT
U7101 UHF/VHF DEMODULATOR UNIT
AC CIRCUIT
S-VHS OUT
VIDEO OUT
AUDIO (L)
IN/OUT (R)
6.3A 125V/250V
F801 125V/250V 6.3A
VJBS9005

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

6.3A 125V/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 6.3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME TYPE 6.3A 125V/250V

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING POWER HEAT SINK AS A COMMON TERMINAL.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

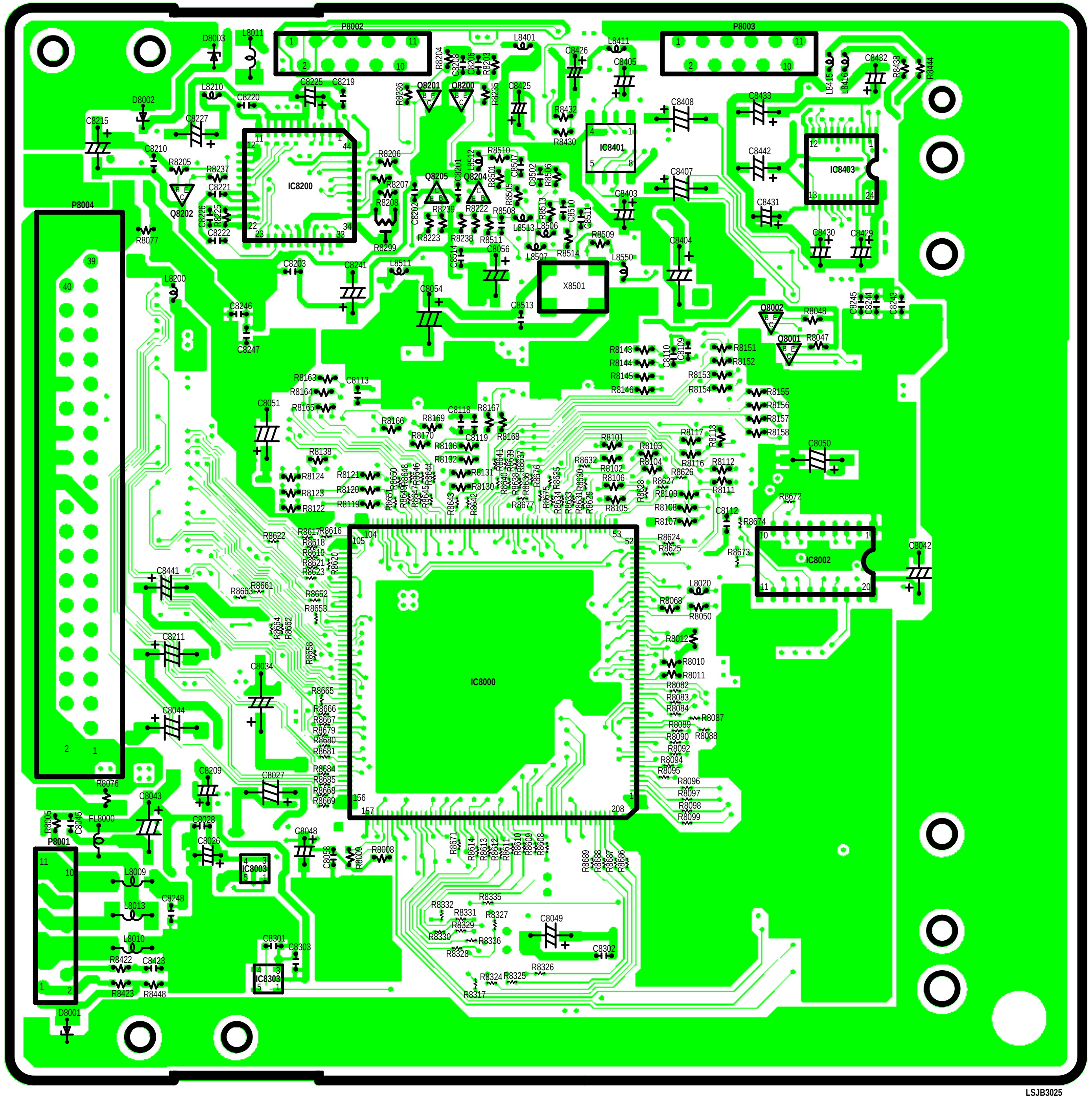
DVD DECODER C.B.A. LSEP3025A

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

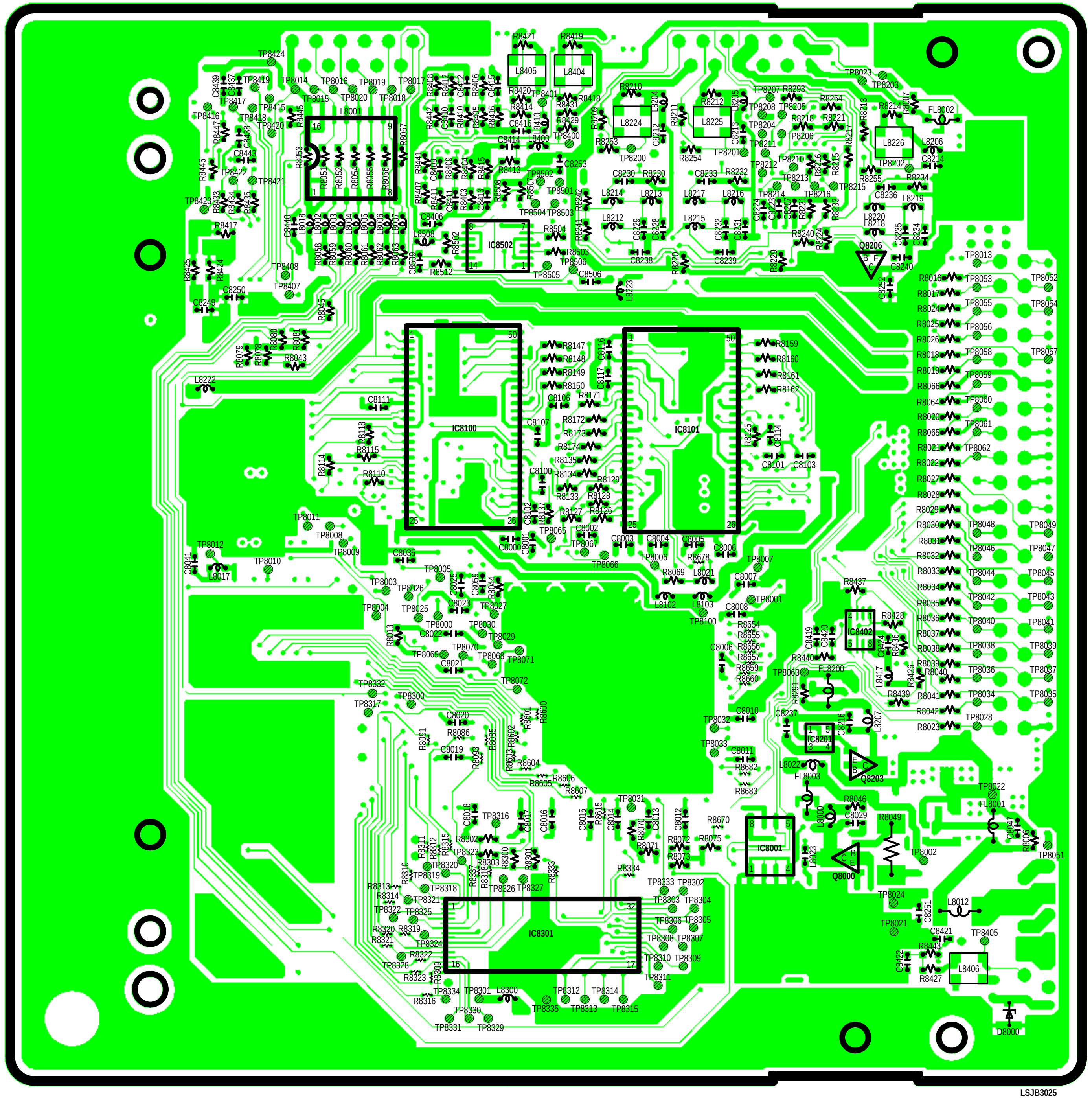
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE: MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT PATETRNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

(COMPONENT SIDE)


P8002
P8003
P8004
P8001
IC8200
IC8401
IC8403
IC8002
IC8000
IC8003
IC8303
X8501
Q8201
Q8200
Q8205
Q8204
Q8202
Q8002
Q8001
D8003
D8002
D8001
L8011
LSJB3025

(FOIL SIDE)


IC8100
IC8101
IC8502
IC8402
IC8201
IC8001
IC8301
Q8206
Q8203
Q8000
L8405
L8404
L8406
D8000
LSJB3025

Omnivision VHS

Panasonic®

TV/DVD/VCR Combination

Operating Instructions

Model No. PV-DF2700-K

DOLBY DIGITAL

dts® DIGITAL OUT

DVD VIDEO™

COMPACT disc DIGITAL VIDEO

COMPACT disc DIGITAL AUDIO

As an ENERGY STAR Partner, Panasonic has determined that this product or product model meets the ENERGY STAR guidelines for energy efficiency.

VCR plus+®

Please read these instructions carefully before attempting to connect, operate or adjust this product. Please save this manual.

Getting Started
Basic Operation
Advanced Operation
For Your Information

Important Safeguards and Precautions

READ AND RETAIN ALL SAFETY AND OPERATING INSTRUCTIONS. HEED ALL WARNINGS IN THE MANUAL AND ON UNIT

INSTALLATION

1 POWER SOURCE CAUTION
Operate only from power source indicated on unit or in this manual. If uncertain, have your Electric Utility Service Company or Video Products Dealer verify your home power source.

2 POWER CORD PLUG
For safety, this unit has a polarized type plug (one wide blade), or a three-wire grounding type plug. Always hold the plug firmly and make sure your hands are dry when plugging in or unplugging the AC power cord. Regularly remove dust, dirt, etc. on the plug.

POLARIZED PLUG CAUTION:
The plug fits into outlet one way. If it cannot be fully inserted, try reversing it. If it still will not fit, have an electrician install the proper wall outlet. Do not tamper with the plug.

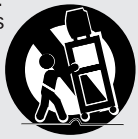
GROUNDING PLUG CAUTION:
The plug requires a three-hole grounding outlet. If necessary, have an electrician install the proper outlet. Do not tamper with the plug.

3 POWER CORD
To avoid unit malfunction, and to protect against electrical shock, fire or personal injury:
- Keep power cord away from heating appliances and walking traffic. Do not rest heavy objects on, or roll such objects over the power cord.
- Do not tamper with the cord in any way.
- An extension cord should have the same type plug (polarized or grounding) and must be securely connected.
- Overloaded wall outlets or extension cords are a fire hazard.
- Frayed cords, damaged plugs, and damaged or cracked wire insulation are hazardous and should be replaced by a qualified electrician.

4 DO NOT BLOCK VENTILATION HOLES
Ventilation openings in the cabinet release heat generated during operation. If blocked, heat build-up may result in a fire hazard or heat damage to cassettes or discs.
For your protection:
a. Never cover ventilation slots while unit is ON, or operate unit while placed on a bed, sofa, rug, or other soft surface.
b. Avoid built-in installation, such as a book case or rack, unless properly ventilated.

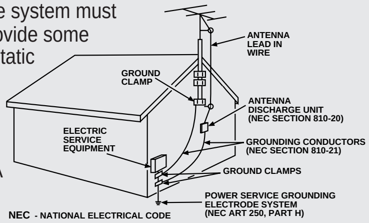
5 PLACEMENT: AVOID EXTREMELY HOT LOCATIONS OR SUDDEN TEMPERATURE CHANGES
Do not place unit over or near a heater or regulator, in direct sunlight, inside closed vehicles, in high temperature [over 95°F (35°C)], or in over 75% humidity. If unit is suddenly moved from a cold place to a warm one, moisture may condense in unit and on the tape causing damage.
Never subject unit to vibration, impact, or place it so that the surface is tilted as internal parts may be seriously damaged.

6 TO AVOID PERSONAL INJURY
- Never place unit on support or stand that is not firm, level, and adequately strong. The unit could fall causing serious injury to a child or adult and damage to the unit.
- Move any appliance and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause objects to overturn.
- Carefully follow all operating instructions.



OUTDOOR ANTENNA INSTALLATION

1 SAFE ANTENNA AND CABLE CONNECTION
An outside antenna or cable system must be properly grounded to provide some protection against built up static charges and voltage.
Part 1 of the Canadian Electrical Code, in U.S.A. Section 810 of the National Electrical Code. ANSI/NFPA 70 provides information regarding proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC - NATIONAL ELECTRICAL CODE

2 KEEP ANTENNA CLEAR OF HIGH VOLTAGE POWER LINES OR CIRCUITS
Locate an outside antenna system well away from power lines and electric light or power circuits so it will never touch these power sources should it ever fall. When installing antenna, absolutely never touch power lines, circuits or other power sources as this could be fatal.

USING THE UNIT

Before unit is brought out of storage or moved to a new location, refer again to the INSTALLATION section of these safeguards.

1 KEEP UNIT WELL AWAY FROM WATER OR MOISTURE, such as vases, sinks, tubs, etc.

2 IF EXPOSED TO RAIN, MOISTURE, OR STRONG IMPACT, unplug unit and have it inspected by a qualified service technician before use.

3 ELECTRICAL STORMS
During a lightning storm, or before leaving unit unused for extended periods of time, disconnect all equipment from the power source as well as the antenna and cable system.

4 WHEN UNIT IS PLUGGED IN
- DO NOT OPERATE IF:
- liquid has spilled into unit.
- unit was dropped or otherwise damaged.
- unit emits smoke, malodors, or noises.
Immediately unplug unit, and have it inspected by a service technician to avoid potential fire and shock hazards.
- Never drop or push any object through openings in unit. Touching internal parts may cause electric shock or fire hazard. Do not put any foreign object on the disc tray.
- Keep magnetic objects, such as speakers, away from unit to avoid electrical interference.

5 USING ACCESSORIES
Use only accessories recommended by the manufacturer to avoid risk of fire, shock, or other hazards.

6 CLEANING UNIT
Unplug unit. Use a clean, dry, chemically untreated cloth to gently remove dust or debris. DO NOT USE cleaning fluids, aerosols, or forced air that could over-spray, or seep into unit and cause electrical shock. Any substance, such as wax, adhesive tape, etc. may mar the cabinet surface. Exposure to greasy, humid, or dusty areas may adversely affect internal parts.

SERVICE

1 DO NOT SERVICE PRODUCT YOURSELF
If, after carefully following detailed operating instructions, the unit does not operate properly, do not attempt to open or remove covers, or make any adjustments not described in the manual. Unplug unit and contact a qualified service technician.

2 REPLACEMENT OF PARTS
Make sure the service technician uses only parts specified by the manufacturer, or have equal safety characteristics as original parts. The use of unauthorized substitutes may result in fire, electric shock, or other hazards.

3 SAFETY CHECK AFTER SERVICING
After unit is serviced or repaired, request that a thorough safety check be done as described in the manufacturer’s service literature to insure video unit is in safe operating condition.

Safety Precautions

Warning: **To prevent fire or shock hazard, do not expose this equipment to rain or moisture.**

Caution: **To prevent electric shock, match wide blade of plug to wide slot, fully insert.**

This video recorder, equipped with the HQ (High Quality) System, is compatible with existing VHS equipment. Only use those tapes with the VHS mark. It is recommended that only cassette tapes that have been tested and inspected for use in 2, 4, 6, and 8 hour VCR machines be used.

This television receiver provides display of television closed captioning.

CAUTION:
UNIT IS A CLASS I LASER PRODUCT.
HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE UNIT CORRECTLY AS INSTRUCTED.

WHEN THIS UNIT IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

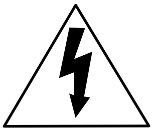
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

CAUTION:
LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM.

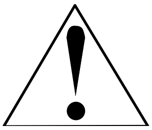
(Inside of product)

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

Region Management Information

Region Management Information: This unit is designed and manufactured to respond to the Region Management Information that is recorded on a DVD disc. If the Region number described on the DVD disc does not correspond to the Region number of this unit, this unit cannot play this disc.

The Region number for this unit is 1. 1

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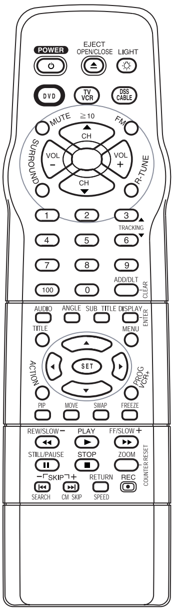
Congratulations

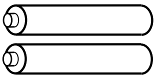
on your purchase of one of the most sophisticated and reliable products on the market today.
Used properly, it will bring you and your family years of enjoyment. Please fill in the information below.
The serial number is on the tag located on the back of your unit.

Date of Purchase ____________
Dealer Purchased From ____________
Dealer Address ____________
Dealer Phone No. ____________
Model No. ____________
Serial No. ____________

Accessories


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
CH
VOL
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
COUNTER RESET

☐ Remote Control
LSSQ0245



☐ Batteries
2 “AA”

Record/Playback Time

Only use tapes with the VHS mark in this unit.

Tape Speed Setting	Type of Video Cassette		
	T60	T120	T160
SP (Standard Play)	1 Hour	2 Hours	2 Hours 40 Minutes
LP (Long Play)	2 Hours	4 Hours	5 Hours 20 Minutes
SLP (Super Long Play)	3 Hours	6 Hours	8 Hours

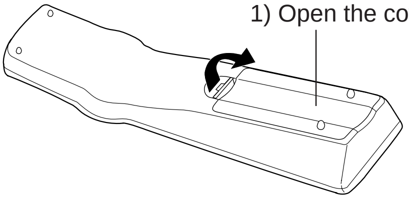
SELF-DEMO Mode

If SELF-DEMO screen is displayed when Power is turned ON, press PLAY/ REPEAT on the unit for 5 seconds to deactivate the SELF-DEMO Mode.

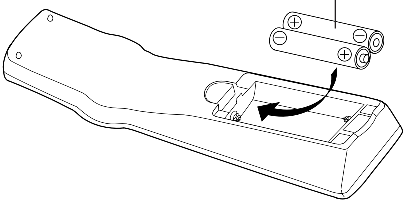
Repeat this to display demo screen.

Loading the Batteries

1) Open the cover.



2) Insert batteries as marked.



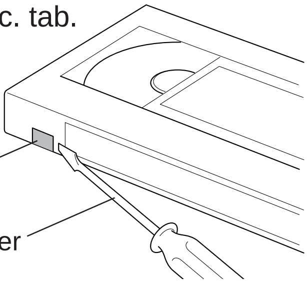
3) Close the cover.

☐ **Battery replacement caution**

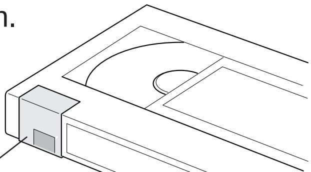
- Do not mix old and new batteries.
- Do not mix alkaline with manganese batteries.

Prevent Accidental Tape Erasure

Break off the rec. tab.


Record Tab
Screw driver

To record again.



Cover the hole with cellophane tape.

Disc formats supported by this unit

The unit can play back discs bearing any of the following marks:

DVD
3” (8 cm) disc / 5” (12 cm) disc

Video CD
3” (8 cm) disc / 5” (12 cm) disc

CD
3” (8 cm) disc / 5” (12 cm) disc

Discs which cannot be played with this unit

- DVD with Region No. other than “1” or “ALL”
- DVD of PAL system
- DVD-ROM
- DVD-R/DVD-RAM
- CD-ROM
- CDV
- CD-G
- CD-RW
- **Do not try to play Photo CD or CD-R.**

DVD VIDEO is registered trademark.

Definition of terms

Angle
Some DVD discs feature scenes simultaneously shot from different angles. The ANGLE button can be used to view the scene from different angles.
(ANGLE indicator lights on the unit when a scene recorded at different angles is detected.)

Chapter number
Titles are subdivided into numbered sections. You can quickly search for a favourite scene using these numbers.

DVD
A high-density optical disc on which high-quality pictures and sound have been digitally recorded.
DVD incorporates new video compression technology (MPEG II) and high-density recording technology which allow entire movies to be recorded with incredible playback quality.

Playback control
With Video CD (version 2.0), scenes or information may be selected for viewing or listening from an interactive menu that appears on the TV screen.

Subtitles
Written dialogue which appears at the bottom of the screen.

Time number
The elapsed play time from the start of a disc or title. Use to quickly find scenes. (May not work with some discs.)

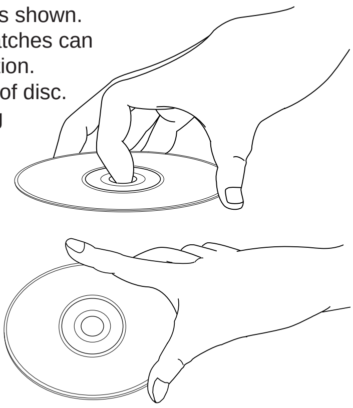
Title number
For DVD discs with two or more titles, the title is numbered as title 1, title 2, etc.

Track number
Numbers assigned to tracks on Video CDs and CDs to allow specific tracks to be quickly located.

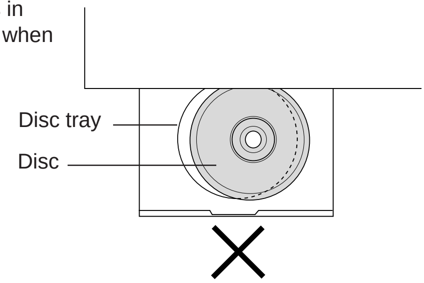
Video CD
CD containing picture and sound with same quality level as video tape. This unit also supports Video CDs with playback control (version 2.0).

Disc handling

Handling precautions

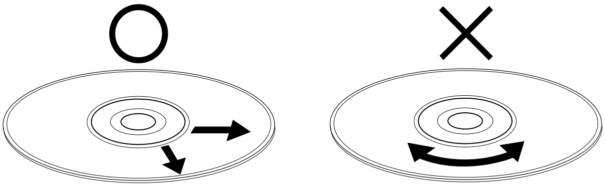


- Only hold disc by edges as shown. Fingerprints, dirt, and scratches can cause skipping and distortion.
- Do not write on label side of disc.
- Never use record cleaning sprays, benzine, thinner, static electricity prevention liquids, or any other solvent.
- Be careful not to drop or bend disc.
- Do not place more than 1 disc on disc tray.
- Do not try to close disc tray when disc is not properly placed.
- Always store discs in their proper cases when not in use.



To clean disc surface

With a soft, damp (water only) cloth, gently wipe from the centre hole to the outer edge as shown below. (Wiping in a circular pattern will scratch the surface.)



If disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe away moisture with a soft, dry, lint-free cloth before using disc. (See above.)

Improper disc storage

Discs could be damaged if stored or left in areas:
- exposed to direct sunlight.
- that are humid or dusty.
- near heat (i.e. heater, regulator, etc.).

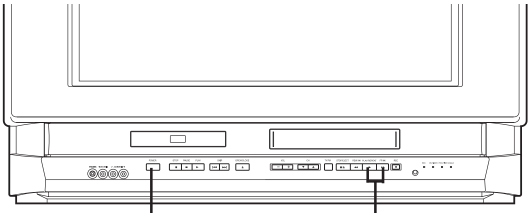
Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. Patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Before Using (continued)

Reset all unit Memory Functions

Use when moving unit to a new location, or if a mistake was made in the One Time Setup section.
- Make sure a tape is not inserted in the unit.



1 Turn the unit Power on.

2 Press and hold both **FF** and **PLAY** on the unit for more than 5 seconds.
- The power will shut off.

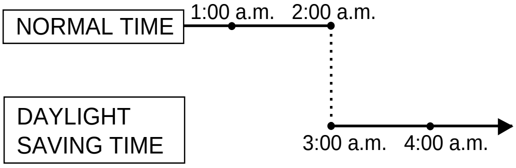
3 Do “One Time Setup” steps on page 12.

DST. (Daylight Saving Time)

Unit auto adjusts clock for DST (Daylight Saving Time).

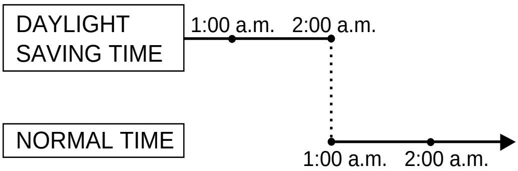
Spring (First Sunday in April)

DST:ON ➜ Sets clock ahead one hour.



Autumn (Last Sunday in October)

DST:ON ➜ moves clock back one hour.



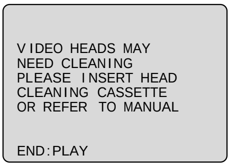
- If your area does not observe Daylight Saving Time, select DST : OFF (see page 14.)
- Keep these time changes in mind when programming the unit for timer recordings.

Head Cleaning

Playing older or damaged tapes may eventually cause video heads to become clogged.

Head Clog Sensor

During playback this screen appears if clogging is detected. To remove screen, press PLAY on the remote or unit.
- **Use “dry” type head cleaning cassette only.** (Part No. NV-TCL30PT is recommended.)
- Follow cleaning tape directions carefully. Excessive use of head cleaning tape can shorten the video head life.
- If head clog symptoms persist, contact your nearest Factory Servicentre or authorized Servicentre. (See page 70.)



VIDEO HEADS MAY
NEED CLEANING
PLEASE INSERT HEAD
CLEANING CASSETTE
OR REFER TO MANUAL

END:PLAY

Specifications

Display	
Picture Tube:	27 inch diagonal pure flat Picture Tube
VCR	
Video Recording System:	4 rotary heads helical scanning system
Audio Track:	1 track (Normal) 2 channel (Hi-Fi Audio Sound)
Tuner	
Broadcast Channels:	VHF 2 ~ 13, UHF 14 ~ 69
CABLE Channels:	Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125
FM Radio	
Band range:	87.5 ~ 108.1 MHz
General	
Power Source:	120V AC, 60 Hz
Power Consumption:	Power On Approx. 174 watts Power Off Approx. 4.5 watts
Television System:	EIA Standard NTSC colour
Speaker:	2 pieces
Operating Temperature:	5 °C ~ 35 °C (41 °F ~ 95 °F)
Operating Humidity:	10 % ~ 75%
Weight:	52.0 kg (114.6 lbs.)
Dimensions:	760 (W) x 651 (H) x 503 (D) mm 29-15/16” (W) x 25-5/8” (H) x 19-3/4” (D)
Discs played	
(1) DVD-VIDEO disc	5” (12 cm) single-sided, single-layer 5” (12 cm) single-sided, double-layer 5” (12 cm) double-sided, double-layer (one layer per side) 3” (8 cm) single-sided, single-layer 3” (8 cm) single-sided, double-layer 3” (8 cm) double-sided, double-layer (one layer per side)
(2) Compact disc (CD-DA, VIDEO CD)	5” (12 cm) disc 3” (8 cm) disc
Digital audio output:	
Optical digital output:	Optical connector
Pickup:	655 nm (DVD) 790 nm (Video CD/CD) Laser power: CLASS II

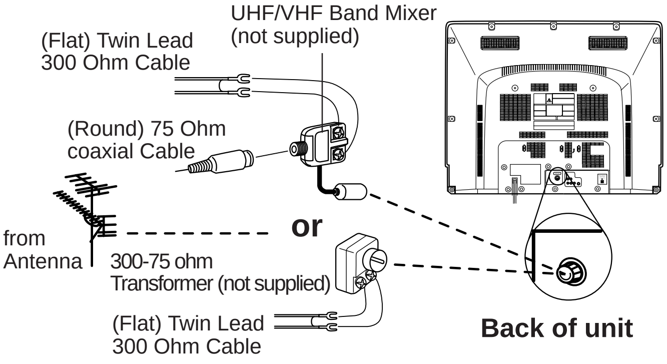
Note: Designs and specifications are subject to change without notice.

Connections

Outdoor Antenna Connections

Unhook the antenna from your previous TV or VCR and connect it to the back of the unit as shown in the diagram.
If your antenna system has separate UHF and VHF lead-ins, you need a UHF/VHF Band Mixer (not supplied.)

WARNING:
When using “Nut type” RF coaxial cables, tighten with fingers only. Overtightening may damage terminals.

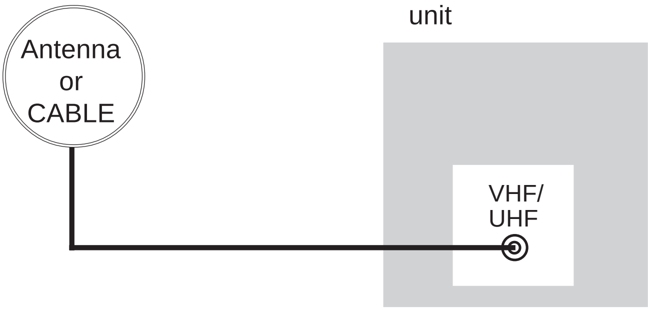

UHF/VHF Band Mixer
(not supplied)
(Flat) Twin Lead
300 Ohm Cable
(Round) 75 Ohm
coaxial Cable
from
Antenna
or
300-75 ohm
Transformer (not supplied)
(Flat) Twin Lead
300 Ohm Cable
Back of unit

DSS/Cable Box Connections

Without a Cable Box

You can;
- record or view unscrambled channels.

You cannot;
- record or view scrambled channels.
- view a channel other than the one selected for any type of recording.


Antenna
or
CABLE
unit
VHF/
UHF

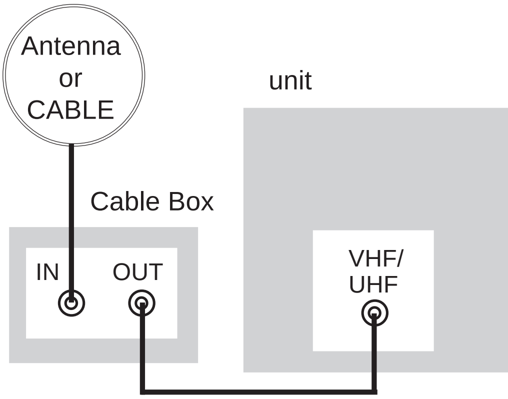
With a Cable Box

You can;
- record or view any channel including scrambled channels.

NOTE: Channel selection must be made at the cable box.

You cannot;
- view a channel other than the one selected for any type of recording.
- do a Timer recording of a channel unless you select it at the cable box.

Note to CABLE System Installer
This reminder is provided to call the CABLE (Cable TV) System Installers attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.


Antenna
or
CABLE
unit
Cable Box
IN
OUT
VHF/
UHF

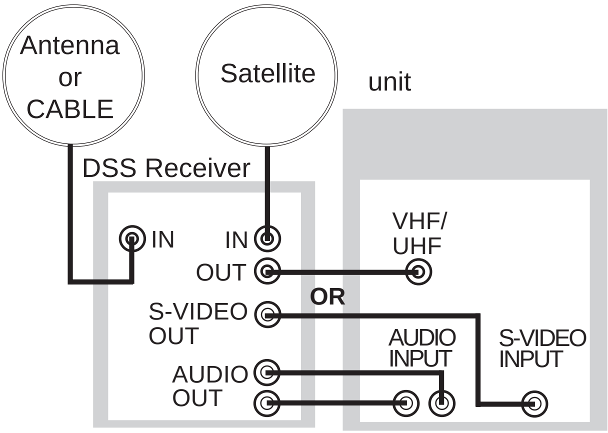
With a DSS Receiver

You can;
- record or view any channel including scrambled channels.

NOTE: Channel selection must be made at the DSS Receiver.

You cannot;
- view a channel other than the one selected for any type of recording.
- do a Timer recording of a channel unless you select it at the DSS box.

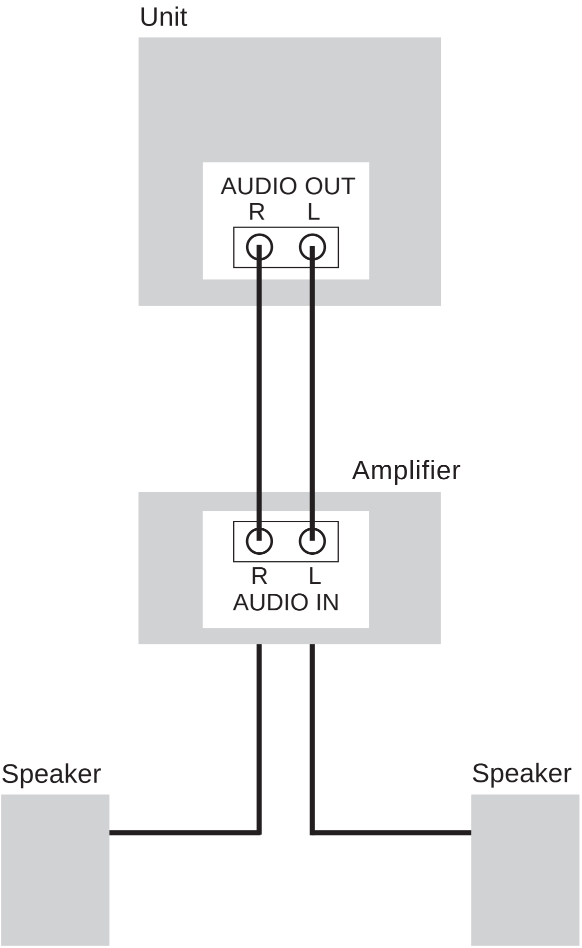
NOTE: The DSS receiver must be turned off to view programs from a cable box or antenna. See the DSS manual for details.


Antenna
or
CABLE
Satellite
unit
DSS Receiver
IN
IN
OUT
S-VIDEO
OUT
AUDIO
OUT
OR
VHF/
UHF
AUDIO
INPUT
S-VIDEO
INPUT

Audio connections

■ Unit ➔ Amplifier ➔ Speaker

Do the “Speaker ON/OFF system” steps on page 49, and select “OFF.”



☑ Check list before you begin.

☐ Turn down the volume, then turn this unit, as well as other equipment to be connected, off before proceeding with connection.

☐ Do not block ventilation holes of any of the equipment and arrange them so that air can circulate freely.

☐ Read through the instructions before connecting other equipment.

☐ Ensure that you observe the colour coding when connecting audio and video cables.

Enjoying digital audio output from the digital audio output connector

Notes on audio output from the optical digital audio output connector

Disc	Sound recording format	Optical digital audio output from connector
DVD	Dolby Digital (AC-3)	Dolby Digital bitstream (2-5.1 ch) or OFF (no output)*1
	Linear PCM (48/96 kHz 16/20/24 bit)	Linear PCM (2ch) (48 kHz sampling/16 bit only)*2 or no output*1
	dts	Bitstream or no output*1
Video CD	MPEG 1	PCM (44.1 kHz sampling)
CD	Linear PCM	Linear PCM (44.1 kHz sampling)

*1 The type of audio output from the connector can be selected by the Settings for DVD Operation. (See page 62.)

*2 Sound having 96 kHz sampling is converted into 48 kHz sampling when it is output from the unit’s optical digital audio output connector.

For your reference:

- Dolby Digital (AC-3) is a digital sound compression technique developed by the Dolby Laboratories Licensing Corporation.
  Supporting 5.1-channel surround sound, as well as stereo (2-channel) sound, this technique enables a large quantity of sound data to be efficiently recorded on a disc.
- Linear PCM is a signal recording format used in CDs. While CDs are recorded in 44.1 kHz/16 bit, DVDs are recorded in 48 kHz/16 bit up to 96 kHz/24 bit.
- If you have a Dolby Pro Logic Surround decoder, you will obtain the full benefit of Pro Logic from the same DVD movies that provide full 5.1 channel Dolby Digital soundtracks, as well as from titles with the Dolby Surround mark.
  For information on Panasonic or Technics Dolby Pro Logic Surround Sound Decoders please contact your local dealer.

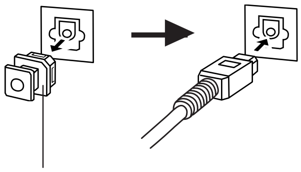
Manufactured under license from Dolby Laboratories. “Dolby”, “AC-3”, “Pro Logic” and the double-D symbol are trademarks of Dolby Laboratories.
Confidential Unpublished Works. © 1992-1997 Dolby Laboratories, Inc. All rights reserved.

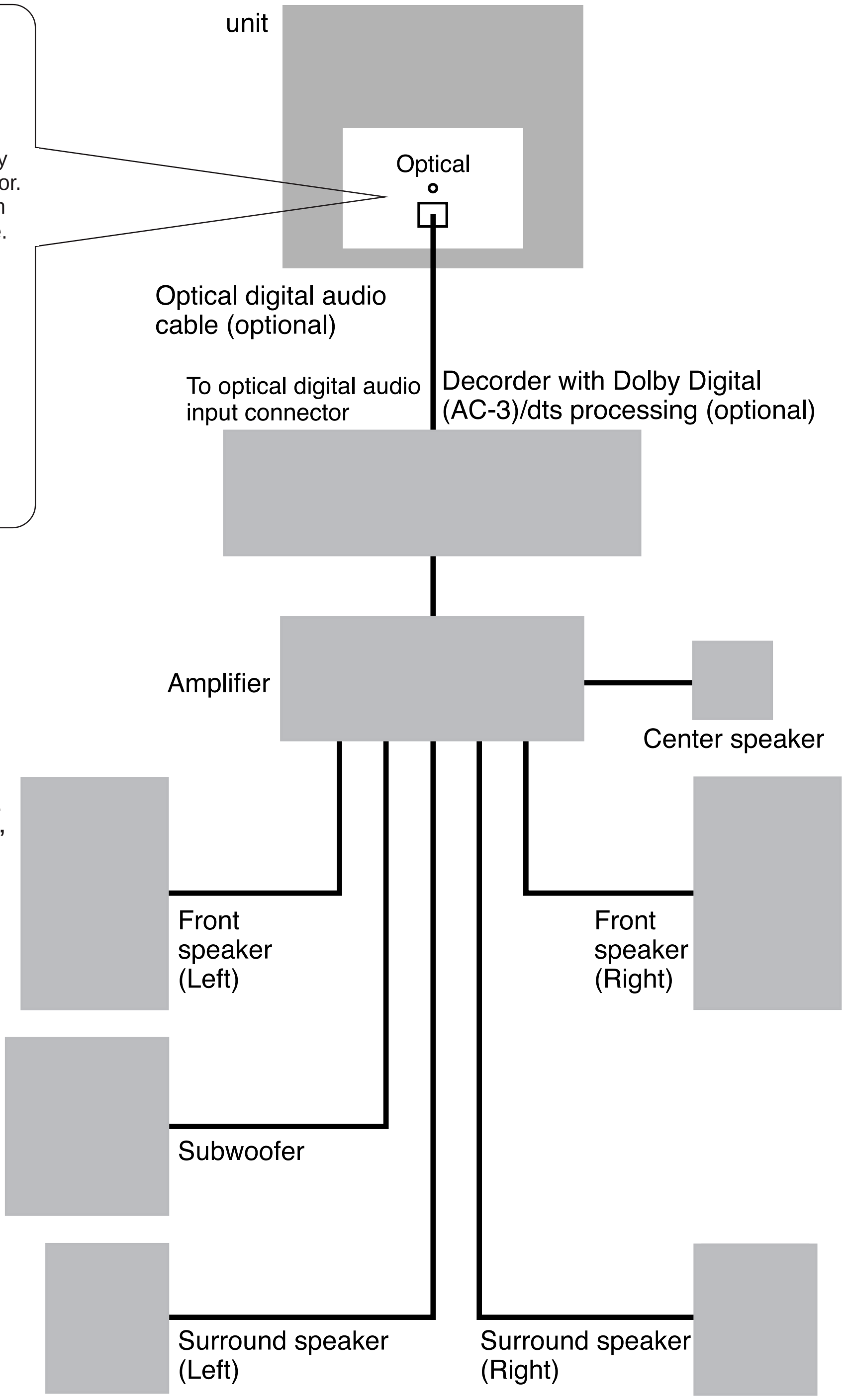
■ Unit → Decoder with Dolby Digital (AC-3) → Amplifier → Speaker or dts (digital theatre systems)

When DVDs recorded in Dolby Digital or dts are played, Dolby Digital bitstream or dts bitstream is output from the unit OPTICAL digital audio output connector. When the unit is connected to a Dolby Digital decoder or dts decoder, you can enjoy theatre-quality audio in your home. [An optical digital audio cable (optional) is required when an optional Dolby Digital decoder or dts decoder is used.]

Notes on connecting an optical digital audio cable (optional)

- Remove dust protection cap from optical digital audio output. Firmly connect the cable to the connector.
- Always reattach the dust protection cap when connector is not in use.


Dust protection cap


unit
Optical
Optical digital audio cable (optional)
To optical digital audio input connector
Decorder with Dolby Digital (AC-3)/dts processing (optional)
Amplifier
Center speaker
Front speaker (Left)
Front speaker (Right)
Subwoofer
Surround speaker (Left)
Surround speaker (Right)

Caution for optical digital audio output connector:

- **When connecting an amplifier (with an optical digital input connector) which does not contain the Dolby Digital (AC-3) or dts decoder, be sure to select "OFF" at "Dolby Digital" and "OFF" at "dts" of the Settings for DVD Operation "AUDIO OUTPUT" (see page 62).**
- **Otherwise any attempt to play DVDs may cause such a high level of noise that it may be harmful to your ears and damage your speakers.**
- **When a dts decoder is connected, please select "Bitstream" at "dts" of the Settings for DVD Operation "AUDIO OUTPUT". If "OFF" is selected, there will be no sound. (See page 62).**
- **Video CDs and CDs can be played as normal.**

Note:
- Some dts decoders which do not support DVD-dts interface may not work properly with the unit.

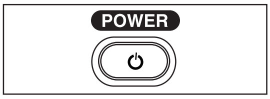
One Time Setup

When the unit is turned on the first time, setup mode is entered automatically.

Process of Setup

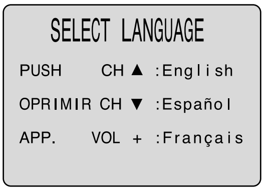
Language ⇨ **Channel** ⇨ **Clock**

1



Press POWER* on the remote or unit.

2

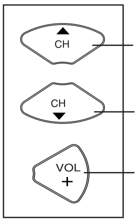

SELECT LANGUAGE

PUSH CH ▲ :English

OPRIMIR CH ▼ :Español

APP. VOL + :Français

Select the language.

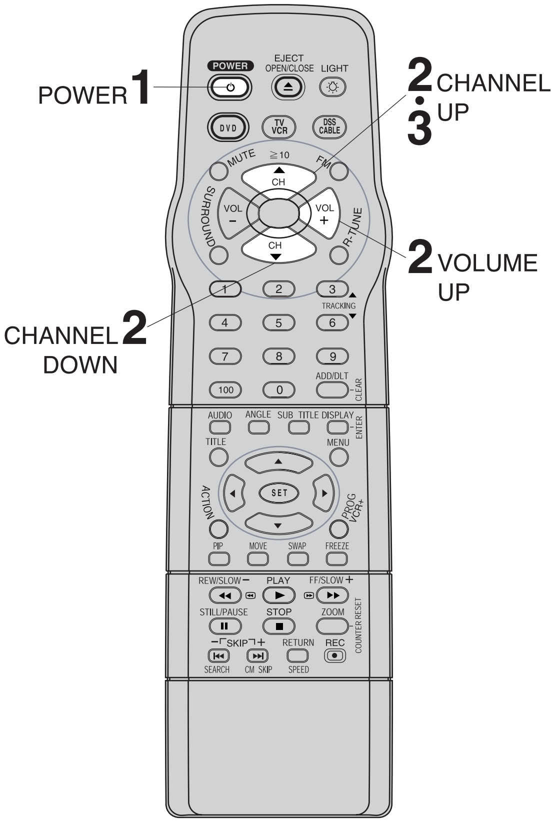


for English

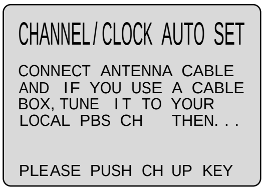
for Spanish (Español)

for French (Français)

- If wrong language is set, complete “Reset all unit Memory Functions” steps page 8.
- If you use a cable box, it must be left on.


POWER 1
2 CHANNEL UP
3
2 VOLUME UP
CHANNEL 2 DOWN
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
CH
VOL
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
ACTION
SET
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED

3

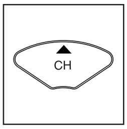

CHANNEL/CLOCK AUTO SET

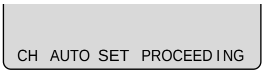
CONNECT ANTENNA CABLE AND IF YOU USE A CABLE BOX, TUNE IT TO YOUR LOCAL PBS CH THEN. . .

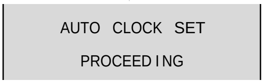
PLEASE PUSH CH UP KEY

Start Channel Auto Set and Clock Auto Set.

Press CH ▲.

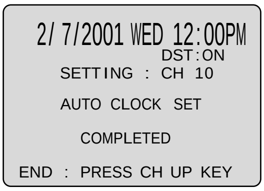



CH AUTO SET PROCEEDING


AUTO CLOCK SET

PROCEEDING

(Setup completed)


2/ 7/2001 WED 12:00PM

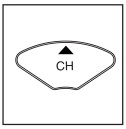
DST:ON

SETTING : CH 10

AUTO CLOCK SET

COMPLETED

END : PRESS CH UP KEY



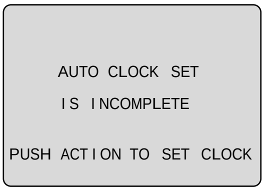
Press CH ▲ to exit.

- If your area observes daylight saving time, but you would like to turn the DST feature off, complete the “To Set or Reset the Clock” steps on page 14 and set DST : OFF.

- **If time is not correct...** even though your area observes daylight saving time and DST is set to ON, do Time Zone Adjust steps on the next page.

(Setup incomplete)

Case 1


AUTO CLOCK SET

IS INCOMPLETE

PUSH ACTION TO SET CLOCK

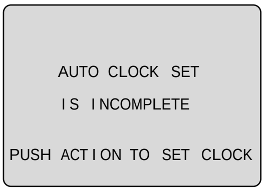
See Case 1 next page.

IMPORTANT NOTE FOR AUTO CLOCK SET

- Auto clock set is performed the first time the unit is turned off each day. If used, a cable box must be left on and tuned to the PBS channel at the time the unit power is turned off if you want auto clock set to be done.
- If using a DSS receiver, it must be turned off for auto clock set.
- If a Cable Box or DSS receiver is connected to the unit via Audio/Video Jacks, an RF coaxial cable must also be connected for auto clock set and channel auto set features.
- If for any reason the time is changed manually, automatic time correction will not occur.

Case 1 Clock Setup is Incomplete Set the clock manually.

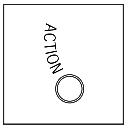
a



AUTO CLOCK SET
IS INCOMPLETE

PUSH ACTION TO SET CLOCK

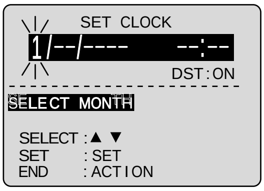
Display SET CLOCK screen.



Press ACTION.

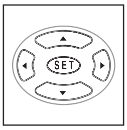
---

b



SET CLOCK
1/--/---- --:--
DST:ON
SELECT MONTH
SELECT : ▲ ▼
SET : SET
END : ACTION

Set the clock manually.



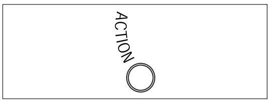
1) Press ▲▼ to select the month.
2) Press SET to set.

- Likewise, set date, year, time, and DST (Daylight Saving Time).

To Make Corrections, repeatedly press ◀ ▶ to move to error, then correct.

---

c

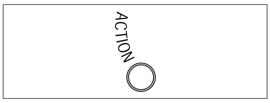


End setup.

Press ACTION twice (Clock starts.)

Time Zone Adjust (if necessary)

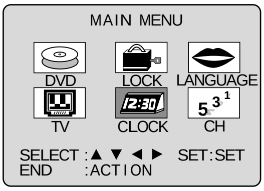
1



Display MAIN MENU.

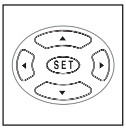
Press ACTION.

2


DVD
LOCK
LANGUAGE
TV
CLOCK
CH

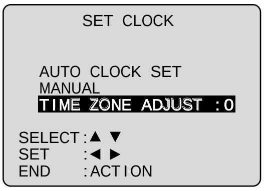
MAIN MENU
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

Display SET CLOCK screen.



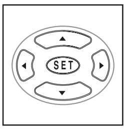
1) Press ▲▼◀▶ to select “CLOCK”
2) Press SET to display.

3



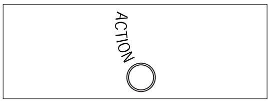
SET CLOCK
AUTO CLOCK SET
MANUAL
TIME ZONE ADJUST : 0
SELECT : ▲ ▼
SET : ◀ ▶
END : ACTION

Select TIME ZONE ADJUST.



1) Press ▲▼ to select.
2) Press ◀ ▶ to subtract or add hour(s) as necessary.

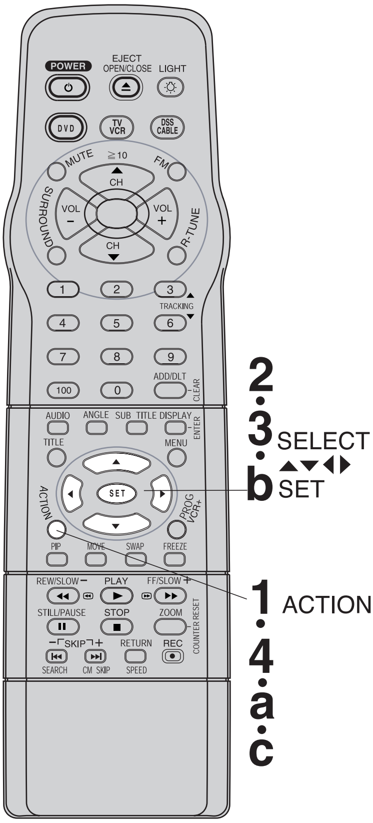
4



End setup.

Press ACTION twice.

- TIME ZONE ADJUST returns to “0” if clock is set manually.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL –
VOL +
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW–
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
2·3 SELECT ▲▼◀▶
b SET
1·4·a·c ACTION

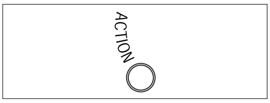
Notes

- Channel auto set selects normal TV or Cable channels depending on your unit hookup.
- The Language, Channel, and Clock settings can be changed at a later time (see page 14). To reset all of these settings, do the “Reset all unit Memory Functions” steps on page 8.
- This unit’s calendar is accurately maintained up to Dec. 31, 2089, 11:59 PM.

Reset Language, Channels, Clock

To Change the OSD Language

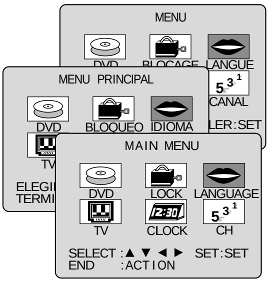
1



Display MAIN MENU.

Press ACTION*.

2


MENU
DVD
BLOCAGE
LANGUE
CANAL
MENU PRINCIPAL
DVD
BLOQUEO
IDIOMA
TV
ELEGI
TERMI
LER:SET
MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶ SET:SET
END :ACTION

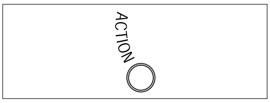
Select the language selection icon.

1) Press ▲▼◀▶ to select.

2) Press SET repeatedly to set.

English:LANGUAGE
Spanish:IDIOMA
French:LANGUE

3



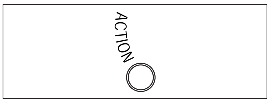
End setup.

Press ACTION to exit.

To Replace Channels in Memory

- It is necessary to enter TV mode by pressing TV/VCR before selecting “CH” on the MAIN MENU.

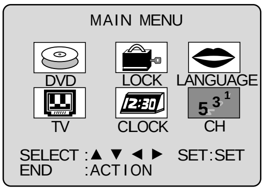
1



Display MAIN MENU.

Press ACTION.

2

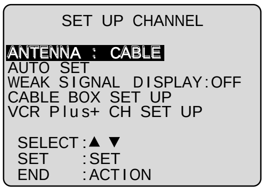

MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶ SET:SET
END :ACTION

Display SET UP CHANNEL screen.

1) Press ▲▼◀▶ to select “CH.”

2) Press SET to display.

3

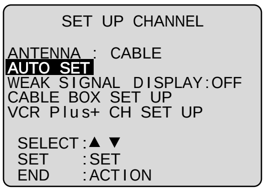

SET UP CHANNEL
ANTENNA : CABLE
AUTO SET
WEAK SIGNAL DISPLAY:OFF
CABLE BOX SET UP
VCR Plus+ CH SET UP
SELECT : ▲ ▼
SET :SET
END :ACTION

Select ANTENNA.

1) Press ▲▼ to select.

2) Press SET to select your antenna system (“TV” or “CABLE.”)

4

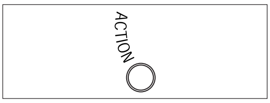

SET UP CHANNEL
ANTENNA : CABLE
AUTO SET
WEAK SIGNAL DISPLAY:OFF
CABLE BOX SET UP
VCR Plus+ CH SET UP
SELECT : ▲ ▼
SET :SET
END :ACTION

Select AUTO SET.

1) Press ▲▼ to select.

2) Press SET to start.

5

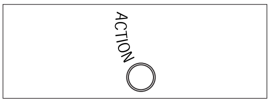


End setup.

Press ACTION twice.

To Set or Reset the Clock

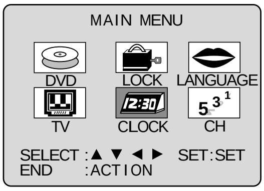
1



Display MAIN MENU.

Press ACTION.

2

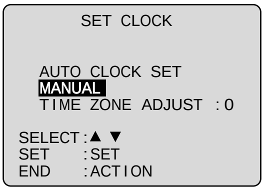

MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶ SET:SET
END :ACTION

Display SET CLOCK screen.

1) Press ▲▼◀▶ to select “CLOCK.”

2) Press SET.

3


SET CLOCK
AUTO CLOCK SET
MANUAL
TIME ZONE ADJUST : 0
SELECT : ▲ ▼
SET :SET
END :ACTION

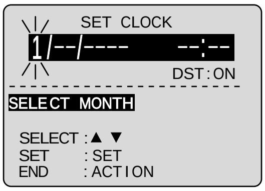
Display SET CLOCK menu.

1) Press ▲▼ to select “MANUAL.”

2) Press SET to set.

- For Auto Clock Set, select “AUTO CLOCK SET” then press SET to set and CH ▲ to start.

4


SET CLOCK
1/--/---- --:--
DST:ON
SELECT MONTH
SELECT : ▲ ▼
SET : SET
END : ACTION

Set the clock manually.

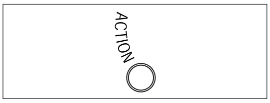
1) Press ▲▼ to select the month.

2) Press SET to set.

- Likewise set date, year, time, and DST. (Daylight Saving Time.)

To Make Corrections,
repeatedly press ◀▶ to move to error, then correct.

5

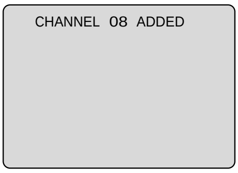


End setup.

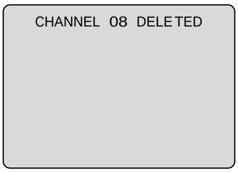
Press ACTION twice to start the clock and exit this mode.

Add or Delete a Channel

To add channel:
Select channel with NUMBERED keys and press ADD/DLT.


CHANNEL 08 ADDED

To delete channel:
Select channel with CH ▲▼ or NUMBERED keys and press ADD/DLT.

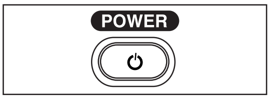

CHANNEL 08 DELETED

TV Operation

*Important: if a remote control button does not work when pressed, press the TV VCR button on the remote and try the button again.

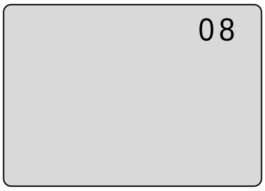
Basic TV Operation

a

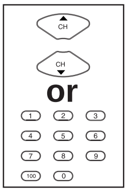


Press POWER on the remote or unit.

b

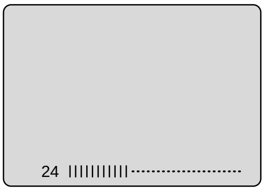


Select a channel.

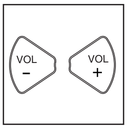

CH
CH
or
1
2
3
4
5
6
7
8
9
100
0

Use CH ▲▼ or NUMBERED keys.

c



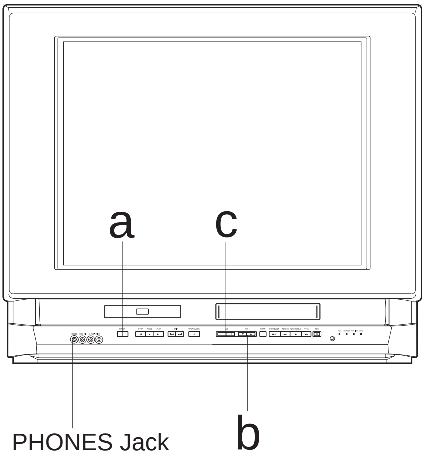
Adjust volume.

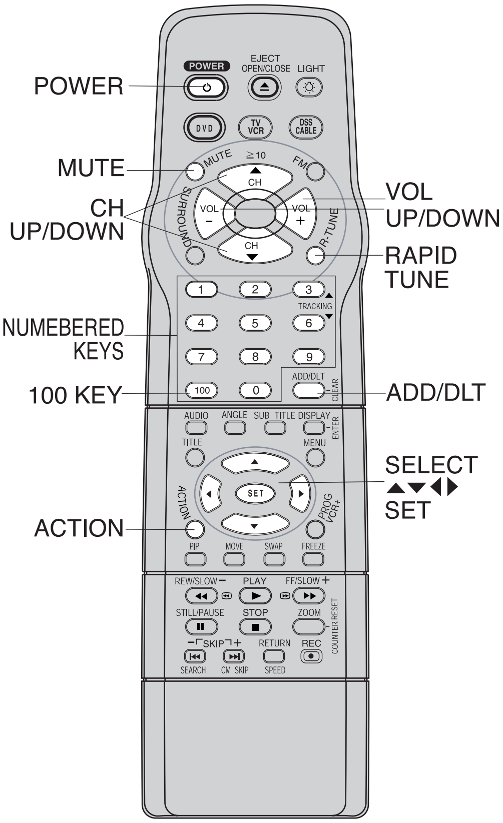


Press VOL + or VOL –.

Check list before you begin.

☐ All connections are made. (See page 9.)
☐ Your unit is plugged in.


a
c
PHONES Jack
b


POWER
MUTE
CH UP/DOWN
NUMEBERED KEYS
100 KEY
ACTION
VOL UP/DOWN
RAPID TUNE
ADD/DLT
SELECT ▲▼◀▶ SET
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL
VOL
SURROUND
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW–
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
COUNTER RESET

■ Using the 100 key

When selecting CABLE channels 100 to 125 with the NUMBERED keys, first press the 100 key, and then enter the remaining two digits.

■ Rapid Tune

Press R-TUNE to display the last channel you were watching.

■ Audio Mute

Press MUTE to instantly mute the sound. Press again, to restore the previous sound level.

■ Phones

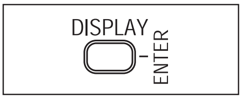
Connect an earphone (not supplied) or headphones (not supplied) to the Phones Jack.

MTS Broadcast / TV Stereo System

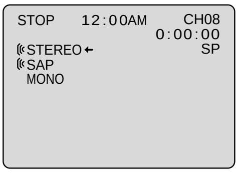
Receivable Broadcast Types

The following are possible broadcast types with their accompanying on-screen displays. The signal being received is indicated with a “ ((” mark while the selected audio mode is indicated with an arrow.
To change the audio mode for these broadcasts, follow the “Select Audio Mode for TV Viewing” section (below.)

Equipped with dbx® -TV Noise Reduction for true MTS reproduction.
dbx® -TV Noise Reduction is required for good stereo separation and audio fidelity.
dbx® is a registered trademark, and is licensed by dbx® Technology Licensing.

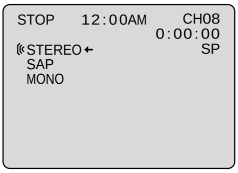

DISPLAY
ENTER

Display the broadcast signal being received.
Press DISPLAY* to display.



```
STOP     12:00AM      CH08
                   0:00:00
                        SP
((STEREO←
((SAP
  MONO
```

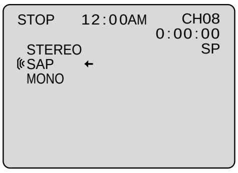
MTS Stereo and SAP broadcast
Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are both being received simultaneously. Select the STEREO or SAP audio mode.



```
STOP     12:00AM      CH08
                   0:00:00
                        SP
((STEREO←
  SAP
  MONO
```

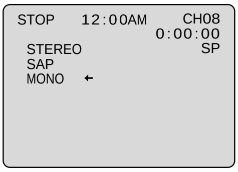
MTS Stereo broadcast
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and the display flickers, select MONO audio mode for possibly better results.



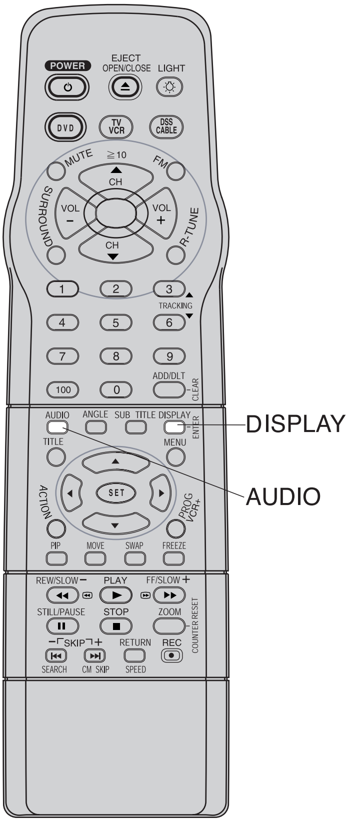
```
STOP     12:00AM      CH08
                   0:00:00
  STEREO                SP
((SAP     ←
  MONO
```

SAP broadcast
Secondary Audio Program (sub language.)
Select SAP audio mode for the sub language.



```
STOP     12:00AM      CH08
                   0:00:00
  STEREO                SP
  SAP
  MONO    ←
```

MONO broadcast
Normal monaural sound broadcast.

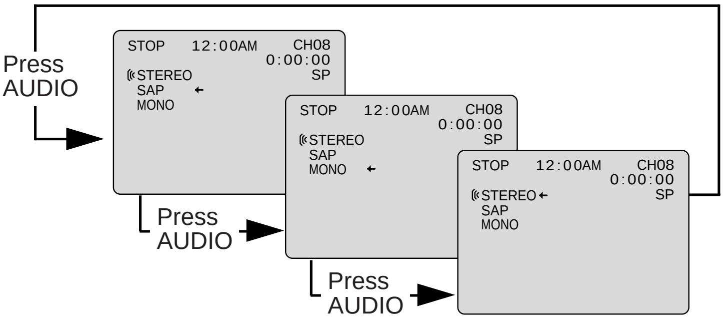

POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL
VOL
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
DISPLAY
AUDIO

Select Audio Mode for TV Viewing

Press AUDIO to select the desired audio mode as described above.
(Arrow shows selection.)

- Each press of AUDIO will change the audio mode as shown below.
- “SAP” is selected with first press of AUDIO.

< Example >


Press AUDIO
Press AUDIO
Press AUDIO

```
STOP     12:00AM      CH08
                   0:00:00
                        SP
((STEREO
  SAP     ←
  MONO
```

```
STOP     12:00AM      CH08
                   0:00:00
                        SP
((STEREO
  SAP
  MONO    ←
```

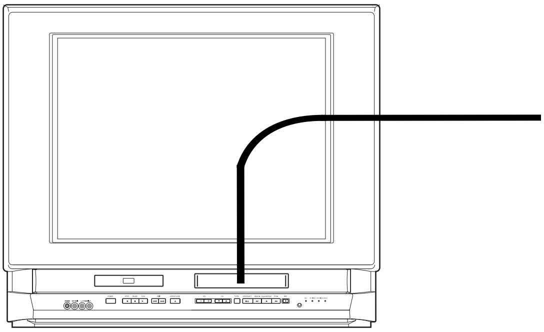
```
STOP     12:00AM      CH08
                   0:00:00
                        SP
((STEREO←
  SAP
  MONO
```

Notes

- Only TV audio from Main Picture is output.
- Audio mode can only be changed for the Main Picture.

Playback a Tape

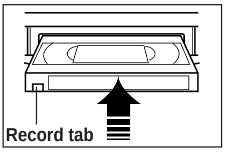
*Important: if a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.



Check list before you begin.

☐ All connections are made. (See page 9.)
☐ Your unit is plugged in.

1



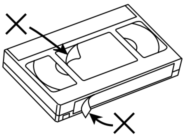
Insert a cassette.

- The unit power comes on automatically.

Note

To prevent tape jam

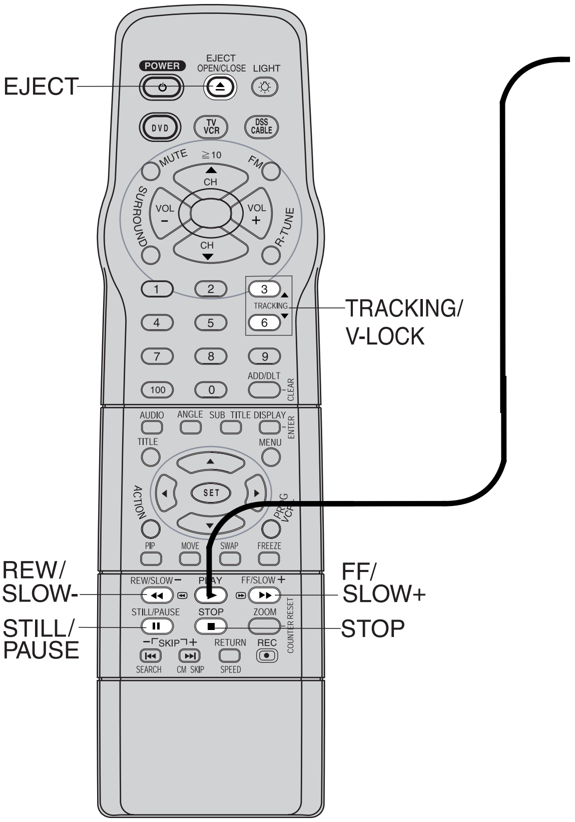
Inspect your cassette tapes and remove any loose or peeling labels.



2

Press PLAY.

- Playback begins if cassette has no record tab (see page6.)


EJECT
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
TRACKING/
V-LOCK
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
REW/
SLOW-
STILL/
PAUSE
FF/
SLOW+
STOP

■ **To Find a Particular Scene**
Forward Search ➔ Press FF/SLOW+
(To release, press PLAY or FF)
Reverse Search ➔ Press REW/SLOW-
(To release, press PLAY or REW)

■ **To view a Still (Freeze) picture ➔**
Press STILL/PAUSE (To release, press PLAY)

■ **To view in Slow Motion ➔**
Press FF/SLOW+ (increases speed) or REW/SLOW- (decreases speed) in the Still mode (To release, press PLAY)

■ **To view Frame by Frame Advance ➔**
Press STILL/PAUSE in the Still mode (To release, press PLAY)

Notes

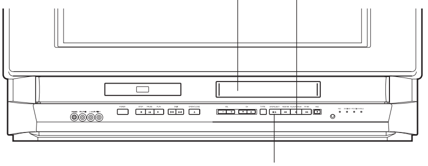
- After the unit is in Still or Slow mode for 3 minutes, it will switch to Stop mode automatically to protect the tape and the video head.
- While main picture is TV mode, and VCR Playback in PIP mode, FF, REW, PLAY, STOP, SEARCH, CM SKIP and STILL operation is possible. During DVD playback on Main Picture, VCR cannot be operated with remote control buttons. Please use unit buttons.
- Pressing PLAY in Stop mode starts playback on the main screen only, not the PIP screen.

■ **To stop** ➔ Press STOP
■ **To rewind tape** ➔ Press FF/SLOW+ in Stop mode
■ **To fast forward tape** ➔ Press REW/SLOW- in Stop mode
■ **To eject tape** ➔ Press EJECT on the remote or STOP/EJECT on the unit

You can operate on the unit

2 Press PLAY/REPEAT.

1 Insert a cassette.



■ Press to stop and/or eject tape.

Features for a Quality Picture

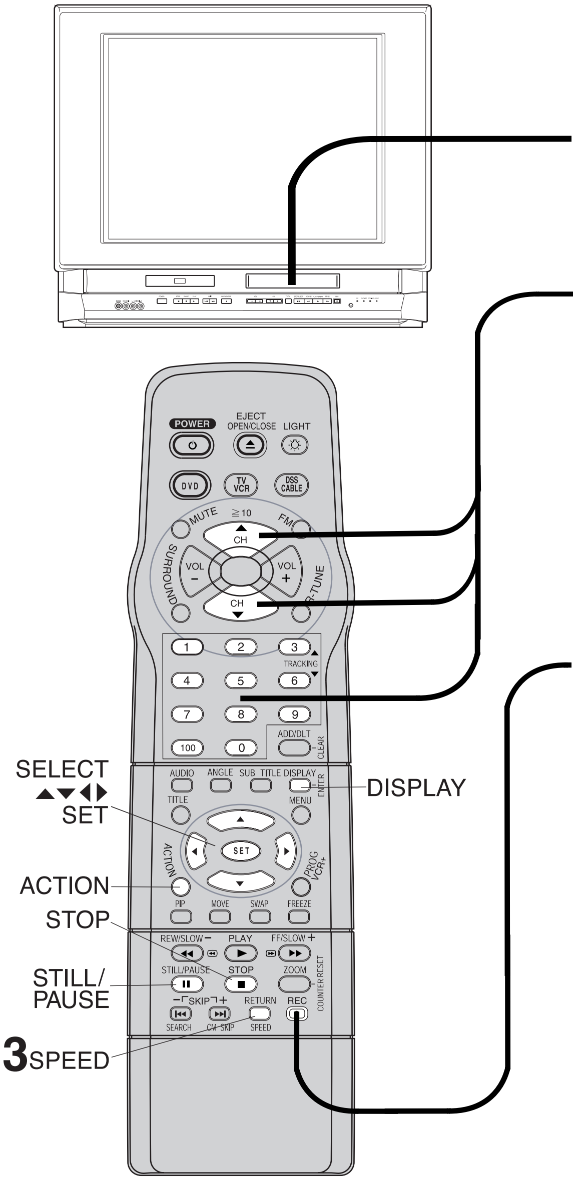
Digital Auto Tracking
Continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control (PIP screen is not displayed)
Use during Playback and Slow Motion mode to reduce picture noise. Press the 3 or 6 NUMBERED key on the remote control or CH (TRACKING) ▲▼ on the unit until the picture clears up. To return to Auto Tracking, press POWER off, then on again a few seconds later.

V-Lock Control (PIP screen is not displayed)
In Still mode, the 3 or 6 NUMBERED key on the remote control or CH (TRACKING) ▲▼ on the unit operate as a V-Lock control to reduce jitter.

Pure flat Picture Tube
This unit is equipped with Pure flat Picture Tube.

Record On a Tape

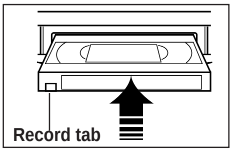


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
SURROUND
VOL −
VOL +
CH
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
ACTION
SET
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
COUNTER RESET
SELECT ▲▼◀▶
SET
ACTION
STOP
STILL/ PAUSE
3 SPEED
DISPLAY

☑ Check list before you begin.

- ☐ All connections are made. (See page 9.)
- ☐ Your unit is plugged in.
- ☐ Cassette with record tab in place.

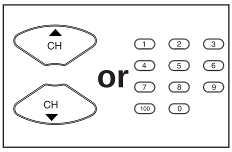
1



Insert a cassette.

- The unit power comes on automatically.

2



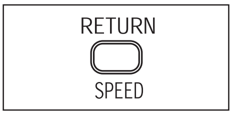
CH
or
1
2
3
4
5
6
7
8
9
100
0

Select Channel.

Press CH ▲▼*, or NUMBERED keys.

- To select "LINE1", "LINE2," see bottom of this page.

3



RETURN
SPEED

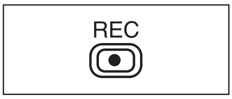
Select Recording speed (see page 6).

Press SPEED.

SP = Standard Play
LP = Long Play
SLP = Super Long Play

- Selected speed is displayed.

4



Start Recording.

Press REC.

- To edit out unwanted portions, press STILL/PAUSE to pause and resume recording.
- You can not view another channel during recording.
- You can view another channel during recording.
- Recording can only be started with the Main Picture.

■ **To stop** ➔ Press STOP

■ **One Touch Recording (OTR)**

Press REC repeatedly to set the recording length (30 min - 4 hours.)

Normal Rec → 0:30 → 1:00 → 1:30 → 2:00 → 3:00 → 4:00 → Normal Rec

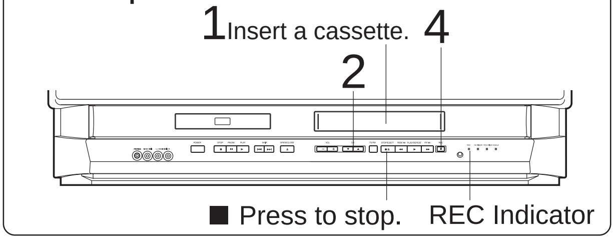
- The unit stops recording at the preset time.
- PROG TIMER indicator lights on the unit.

Notes

- **It is not possible to record from DVD/ Video CD/CD to VHS tape using this unit.**

- After the unit has been in Rec Pause mode for 5 minutes, it will stop automatically to protect the tape and video head.
- The remaining recording time of an OTR can be displayed by pressing DISPLAY.
- If you select a channel and "RECORDING PLEASE TURN OFF PIP" appears, turn PIP off and try again.
- If PAUSE is pressed in PIP mode, "REC CH-- PLEASE SWITCH TO RECORDING CH" is displayed. In this case, select recording channel and try again.

You can operate on the unit



1 Insert a cassette.
4
2
■ Press to stop.
REC Indicator

Selecting Input Mode

Method 1:
Press CH ▲▼. The display will change as follows.

LINE2 ↔ 1 ↔ 2 ↔ 3 ↔ … ↔ 125 (CABLE) or 69 (TV) ↔ LINE1 ↔ LINE2

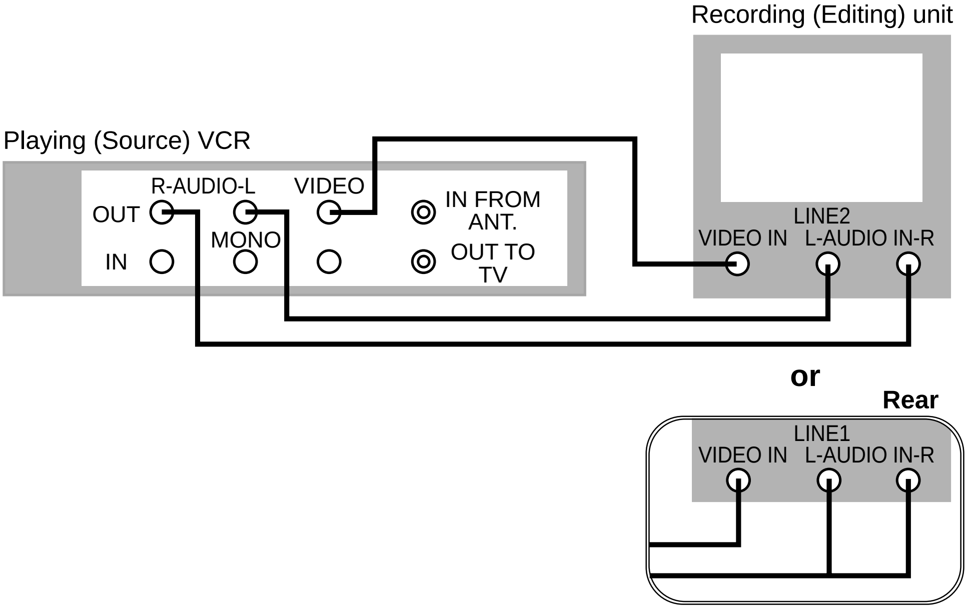
Method 2:

a Press ACTION for MAIN MENU.
b Press ▲▼◀▶ to select "TV", then press ACTION for SET UP TV screen.
c Press ▲▼ to select "INPUT SELECT," and then press SET to select "TUNER", "LINE1" or "LINE2."
d Press ACTION twice to exit this mode.

- LINE 1: For rear audio/video connection.
- LINE 2: For front audio/video connection.

Copy Your Tapes (Dubbing)

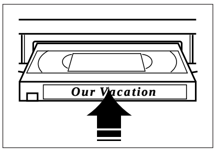
Connections you'll need to make.


Recording (Editing) unit
Playing (Source) VCR
R-AUDIO-L
VIDEO
OUT
IN
MONO
IN FROM ANT.
OUT TO TV
LINE2
VIDEO IN
L-AUDIO IN-R
or
Rear
LINE1
VIDEO IN
L-AUDIO IN-R

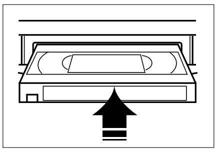
Playback (Source) VCR

Recording (Editing) unit

1


Our Vacation

Insert pre-recorded tape.



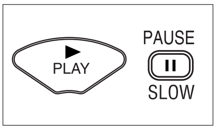
Insert blank tape with record tab.

- Dubbing tapes protected with Copy Guard will have poor quality results.

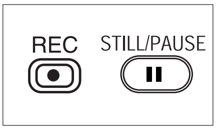
2

Select "LINE" mode.
See "Selecting Input Mode" section on page 18.

3

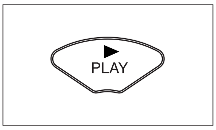

PLAY
PAUSE
SLOW

Put in Standby mode.
Press PLAY, then PAUSE at starting point.


REC
STILL/PAUSE

Put in Standby mode.
Press REC, then STILL/PAUSE immediately.

4

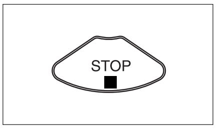


Start dubbing.
Press PLAY.

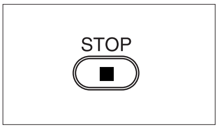
STILL/PAUSE

Start dubbing.
Press STILL/PAUSE.

5



Stop dubbing.
Press STOP/EJECT.



Stop dubbing.
Press STOP.

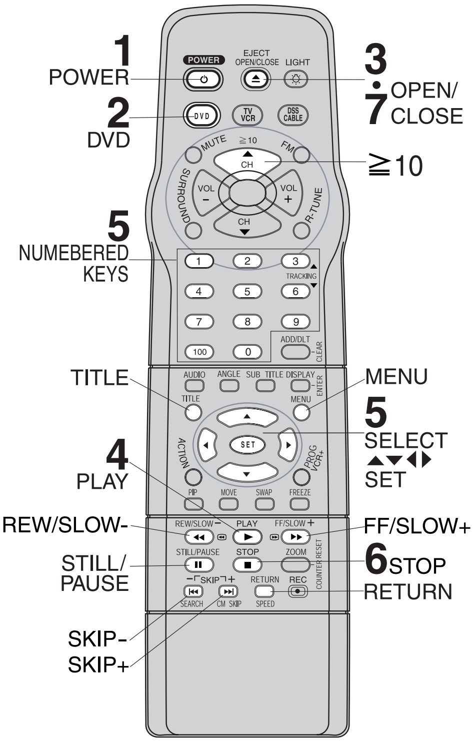
Notes

- **Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.**
- **Please note that some tapes cannot be dubbed on this unit.**
  Also, it is not possible to dub DVD/Video CD/CD to VHS tape using this unit.

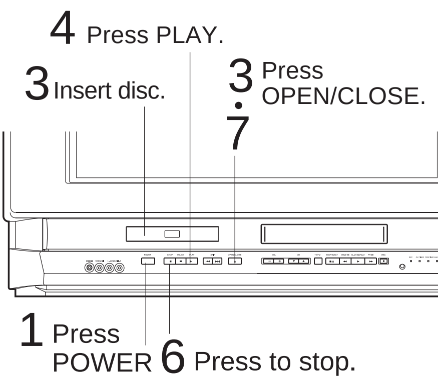
Basic DVD Operation

Check list before you begin.

- ☐ All connections are made. (See page 9.)
- ☐ Your unit is plugged in.
- ☐ Switch on the stereo system's power if the unit has been connected to an audio Amplifier.


1 POWER
2 DVD
5 NUMEBERED KEYS
TITLE
4 PLAY
REW/SLOW-
STILL/ PAUSE
SKIP-
SKIP+
3 • 7 OPEN/ CLOSE
≧10
MENU
5 SELECT ▲▼◀▶ SET
FF/SLOW+
6 STOP
RETURN
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
CH
VOL
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
ACTION
PROG VCR+
SET
PIP
MOVE
SWAP
FREEZE
PLAY
STOP
ZOOM
RETURN
REC
COUNTER RESET
SEARCH
CM SKIP
SPEED

You can operate on the unit

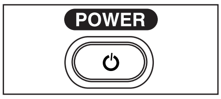

4 Press PLAY.
3 Insert disc.
3 • 7 Press OPEN/CLOSE.
1 Press POWER
6 Press to stop.

---

*[1] Interactive DVD...
May include multiple camera angles, stories, etc.

*[2] Video CD with playback control...
Particular scenes or information can be interactively selected from a menu that appears on the screen.

1



Press POWER* on the remote or unit.

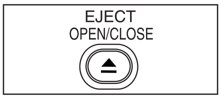
2

Select DVD mode.

Press DVD.

- If a disc is already inserted, go to step 4. (Depending on the disc, playback may start automatically.)

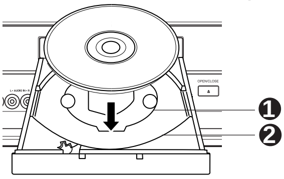
3


EJECT OPEN/CLOSE

Insert a disc.

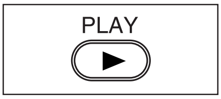
1) Press OPEN/CLOSE.

2) Place disc into disc tray.



- Hold disc by its edges only (page 7) with printed side up and use guides to place into tray. Use ❶ 3"(8 cm) or ❷ 5" (12 cm) disc.

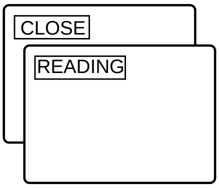
4



Start play.

Press PLAY.

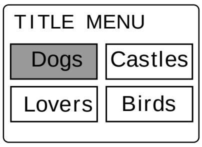
The disc tray closes automatically.


CLOSE
READING

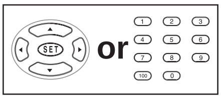
- Or, close the tray by pressing OPEN/ CLOSE.
- Reading time differs depending on discs.

If an interactive DVD*[1] or a Video CD with playback control*[2] is used and a TITLE MENU appears, go to step 5.

<Example>


TITLE MENU
Dogs
Castles
Lovers
Birds

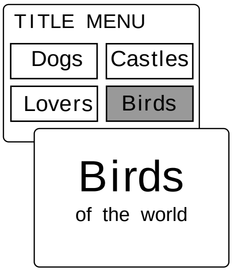
5


SET
or
1 2 3
4 5 6
7 8 9
100 0

Select the desired item.

1) Press ▲▼◀ ▶ or NUMBERED key(s) as shown below.

2) Press SET to play.


TITLE MENU
Dogs
Castles
Lovers
Birds
Birds
of the world

<Example>

Using NUMBERED key(s) starts play automatically.

<Example>

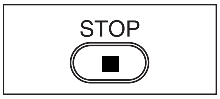
1 digit number	1 ••• 1
2 digit number	12 ••• ≧10➔1➔2
3 digit number	123 •••100➔1➔2➔3

Press SKIP ▶▶| or |◀◀ to go to next or previous menu screen.

- SKIP function not available with all discs. Please refer to disc jacket for operation information.

To return to menu (play stops)
Press TITLE, MENU, or RETURN. (DVD)
Press RETURN. (Video CD)

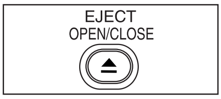
6



Stop play.

Press STOP.

7


EJECT OPEN/CLOSE

Eject the disc.

Press OPEN/CLOSE.

■ To Find a Particular Scene

Rapid Advance →

Press FF/SLOW+ in play mode

Rapid Reverse →

Press REW/SLOW- in play mode

(To release, press PLAY)

- Starting rapid advance (reverse) during play started from menu on Video CDs may recall menu.
- The speed of advance (reverse), slow at first, increases with each additional press of the button up to 5 levels.

■ To Skip a Chapter/Track

Skipping Ahead →

Press SKIP ▶▶| during play

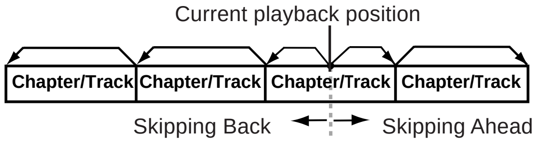
Each press skips a chapter (DVD) or track (Video CD/CD).

Skipping Back →

Press |◀◀ SKIP during play

Pressing once midway through a chapter/track returns to start of that chapter/track. Each additional press skips back one chapter/track.

- Pressing SKIP ▶▶| or |◀◀ during play started from menu on Video CDs may recall menu.



■ To view Still Picture (Pause)

Press STILL/PAUSE during play

(To release, press PLAY)

- **DVD/Video CD :** The unit will enter still picture mode.
- **CD :** The unit will enter pause mode.

■ To view Frame by Frame Advance (DVD/Video CD)

Each button press advances picture one frame.

Press STILL/PAUSE in still mode

(To resume normal play, press PLAY)

- Hold button down for consecutive frame advance.
- Whether pictures are advanced by “frame” or “field” is selected automatically.

■ To view Slow Motion (DVD/Video CD)

Press FF/SLOW+ or REW/SLOW- in still mode

(To release, press PLAY)

- Slow motion speed, slow at first, is increased with each additional press of the button up to 5 levels.
- For Video CDs, reverse slow motion is not available.

- When ⊘ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.

RESUME function

The unit memorizes the point where STOP is pressed (▶ flashes on screen).
Press PLAY to resume play from this point.
Pressing STOP again or opening the tray cancels RESUME, however, RESUME is not cancelled when power is turned off and on.

- RESUME works only with discs for which elapsed play time is displayed during play.

Auto-Power Off function

Power turns off after unit has been in stop mode (DVD) for about 5 minutes.

Enjoy Video CDs with playback control without using menus (Video CDs only)

1. Do steps 1-4 (previous page). When menu appears, press STOP.
2. Press NUMBERED key(s) to select desired track (play begins).
   - Check disc for track numbers.
   - Press “1” to start at beginning of disc.

To resume menu use
Press RETURN, and then MENU. Now, go to step 5 (previous page).

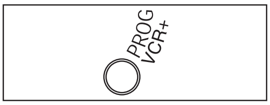
Notes

- Please read the disc jacket for operation information.
- If a single sided disc is placed in upside down, “PLEASE CHECK THE DISC, AND FOR STAINS OR SCRATCHES ON DISC” is displayed.
- When Power is turned off while in DVD mode, the unit will be in TV mode the next time Power is turned on.
- Remove disc and press unit POWER off when not in use.
- Disc continues to rotate with menu displayed even after play is done. Press STOP to clear menu display when finished with menu.
- TITLE MENU cannot be operated if displayed on the PIP. Press SWAP to switch it to Main Picture, then operate.
- During DVD playback on PIP, DVD cannot be operated by remote control. Press SWAP to switch to Main Picture, or use unit buttons.
- If PIP is cancelled during DVD playback on PIP, DVD playback will stop after a while.
- Pressing PLAY in Stop mode starts playback on the main screen only, not the PIP screen.

Timer Recording

You can set up to 8 programs to be recorded while you are away.

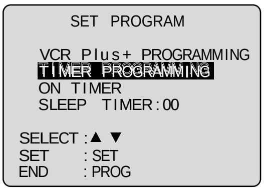
1



Display SET PROGRAM screen.

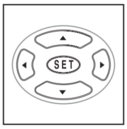
Press PROG/VCR+*.

2



```
        SET  PROGRAM

   VCR Plus+ PROGRAMMING
   TIMER PROGRAMMING
   ON TIMER
   SLEEP  TIMER:00

SELECT :▲ ▼
SET    : SET
END    : PROG
```

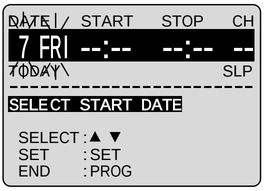
Select TIMER PROGRAMMING.



1) Press ▲▼ to select.
2) Press SET to display.

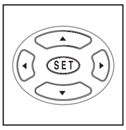
- If a program is already in memory, press ▲▼, and SET to select an unused program number.

3



```
DATE      START    STOP    CH
 7 FRI   --:--    --:--   --
TODAY                     SLP
-----------------------------
SELECT START DATE

 SELECT :▲ ▼
 SET    :SET
 END    :PROG
```

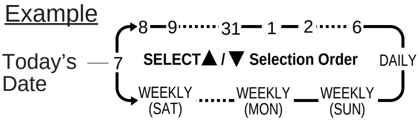
Set the recording DATE.



1) Press ▲▼ to select.
2) Press SET or ◀ ▶ to set.

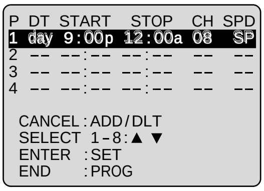
- 1~31 = One time
- DAILY = MON~FRI
- WEEKLY SUN~SAT =Same time once a week

Example


Today's Date
7
8
9
31
1
2
6
DAILY
WEEKLY (SUN)
WEEKLY (MON)
WEEKLY (SAT)
SELECT▲/▼ Selection Order

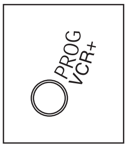
Repeat step 3 to set:
- start time, stop time
- Channel (or LINE for outside source)
- Speed (SP, LP, SLP)

4



```
P DT  START   STOP   CH  SPD
1 day  9:00p  12:00a  08   SP
2 --  --:--  --:--   --   --
3 --  --:--  --:--   --   --
4 --  --:--  --:--   --   --

 CANCEL :ADD/DLT
 SELECT 1-8:▲ ▼
 ENTER  :SET
 END    :PROG
```

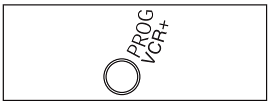
End the program.



Press PROG/VCR+.

To Enter More Programs
Press ▲▼ and SET to select and set a blank program number, and then repeat step **3**.

5



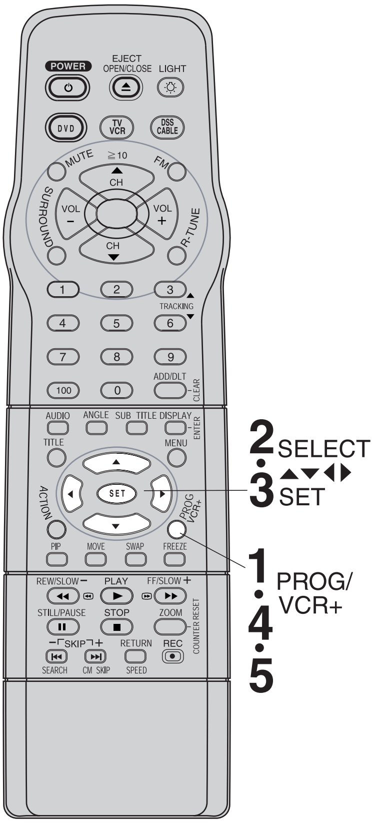
Exit this mode.

Press PROG/VCR+ twice.

- If you're using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.
- PROG TIMER indicator lights on the unit.

Check list before you begin.

☐ All connections are made. (See page 9.)
☐ Your unit is plugged in.
☐ The clock is set to correct time.
☐ The tape is long enough.
☐ The record tab is in place.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL −
VOL +
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
ACTION
SET
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
2 SELECT ▲▼◀▶
3 SET
1
4
5
PROG/VCR+

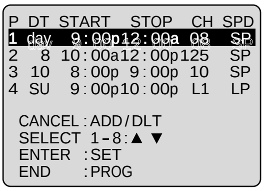
Notes

- If the start times of two programs overlap, the lower numbered program will have priority.
- If the start time for a Timer Recording comes up during a normal recording or One Touch Recording (page 18), the Timer Recording will not be performed.
- If "INCOMPLETE" appears after all items have been set, check all entries and make necessary corrections.
- If there is a power interruption of more than one minute, the recording may not be performed or continued.
- 2 minutes before Timer recording is performed, "PLEASE PREPARE FOR TIMER REC" appears and/or the PROG TIMER indicator flashes. Be sure a cassette with record tab is loaded and the unit is in Stop mode.

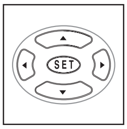
Review, Replace or Clear Program Contents : (Recording is not in progress)

a Repeat steps 1 and 2 on page 22.

b Select the desired program.

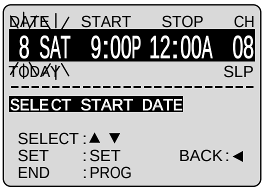


```
P  DT  START   STOP   CH  SPD
1 day   9:00p12:00a  08   SP
2   8  10:00a12:00p125    SP
3  10   8:00p 9:00p  10   SP
4  SU   9:00p10:00p  L1   LP

  CANCEL:ADD/DLT
  SELECT 1-8:▲ ▼
  ENTER  :SET
  END    :PROG
```

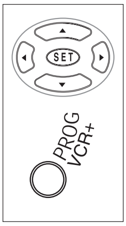


Press ▲▼ to select.

c To Replace program...

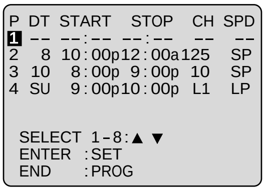


```
DATE      START     STOP     CH
 8 SAT   9:00P  12:00A   08
TODAY                       SLP
--------------------------
SELECT START DATE

 SELECT:▲ ▼
 SET    :SET          BACK:◀
 END    :PROG
```


SET
PROG
VCR+

1) Press SET to display.
2) Press ▲▼ to select and ◀▶ or SET to set new program contents.
3) Press PROG/VCR+.

To Clear program...

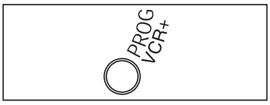


```
P  DT  START   STOP   CH  SPD
1 --  --:-- --:--   --   --
2   8  10:00p12:00a125    SP
3  10   8:00p 9:00p  10   SP
4  SU   9:00p10:00p  L1   LP

  SELECT 1-8:▲ ▼
  ENTER  :SET
  END    :PROG
```

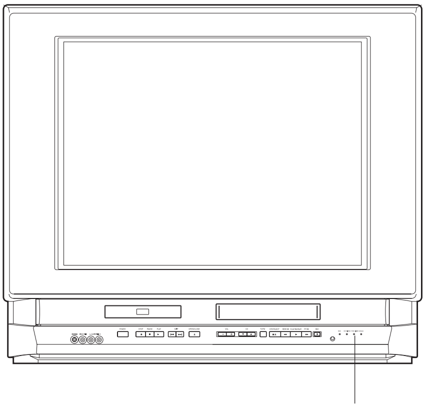
ADD/DLT
CLEAR

Press ADD/DLT.

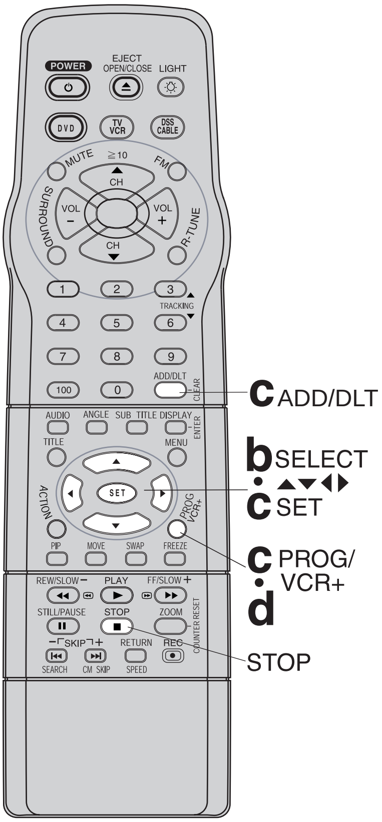
d Exit this mode.



Press PROG/VCR+ twice.



PROG TIMER indicator


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL −
VOL +
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB
TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
c ADD/DLT
b SELECT ▲▼◀▶
c SET
c PROG/ VCR+
d
STOP

Cancel a Timer Recording: (Recording is in progress)

Hold down STOP for a few seconds to cancel the Timer Recording.

- Any future daily or weekly recordings will be performed as programmed.

Note

- If a timer recording starts in PIP mode, the current PIP will be replaced with the timer recording picture. However, if the PIP source is LINE input or if you are watching a DVD/Video CD/CD, the picture will not change.

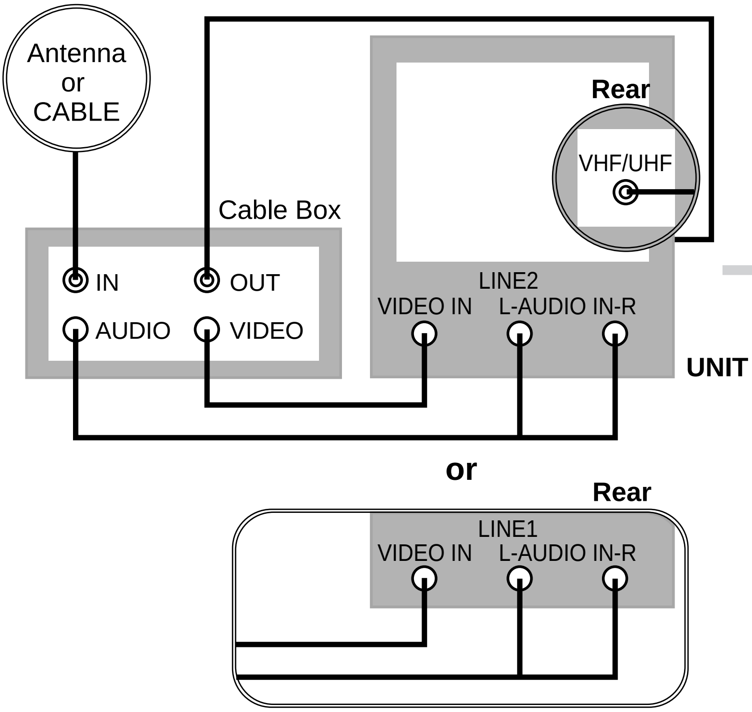
Timer Programming using VCR Plus+® System

VCR Plus+ System is...
a feature that allows you to set most items of a Timer Recording by simply entering a special code number (PlusCode) found in TV GUIDE and selected newspaper TV listings.

Process of Recording
Connection ⇨ **Setup** ⇨ **Programming**

Choose your connection type from the following diagrams

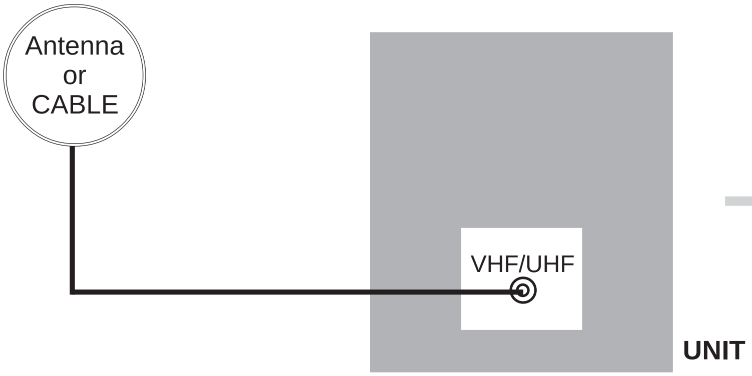
■ CABLE BOX → UNIT


Antenna
or
CABLE
Cable Box
IN
OUT
AUDIO
VIDEO
Rear
VHF/UHF
LINE2
VIDEO IN
L-AUDIO IN-R
UNIT
or
Rear
LINE1
VIDEO IN
L-AUDIO IN-R

Set up on page 25

Programming on page 27

■ ANTENNA or CABLE → UNIT


Antenna
or
CABLE
VHF/UHF
UNIT

Set up on page 26

Cable Box Setup

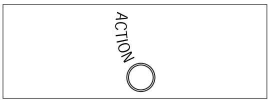
Process of Recording

Connection ⇨ **Setup** ⇨ Programming

Check list before you begin.

☐ It is necessary to enter TV mode by pressing TV/VCR before selecting "CH" on the MAIN MENU.

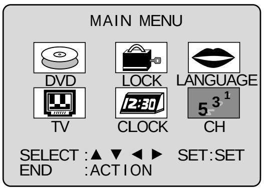
1



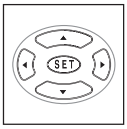
Display MAIN MENU.

Press ACTION*.

2

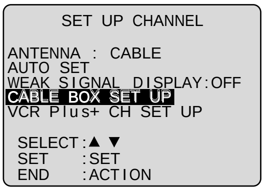

MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

Display SET UP CHANNEL screen.



1) Press ▲▼◀▶ to select "CH."
2) Press SET to display.

3

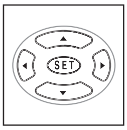


SET UP CHANNEL

ANTENNA : CABLE
AUTO SET
WEAK SIGNAL DISPLAY:OFF
CABLE BOX SET UP
VCR Plus+ CH SET UP

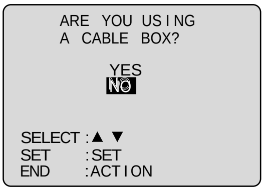
SELECT : ▲ ▼
SET : SET
END : ACTION

Select CABLE BOX SET UP.



1) Press ▲▼ to select.
2) Press SET to display.

4

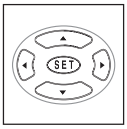


ARE YOU USING A CABLE BOX?

YES
NO

SELECT : ▲ ▼
SET : SET
END : ACTION

Select "YES" or "NO."

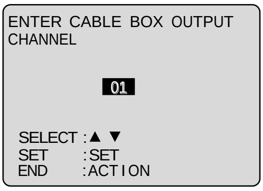


1) Press ▲▼ to select "YES" or "NO."
2) Press SET to set.

If you select...

- **"YES" → Step 5.**
- **"NO" → Press ACTION → Go to VCR Plus+ Channel Setup on page 26.**

5

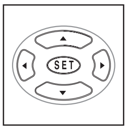


ENTER CABLE BOX OUTPUT CHANNEL

01

SELECT : ▲ ▼
SET : SET
END : ACTION

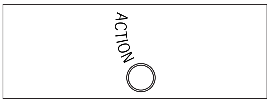
Select Cable Box output channel number.



1) Press ▲▼ to select.
2) Press SET to enter.

- If necessary, refer to your cable box manual.
- If you are using Audio/Video jack connection for your cable box, select and set "VIDEO OUT" as the output channel.

6

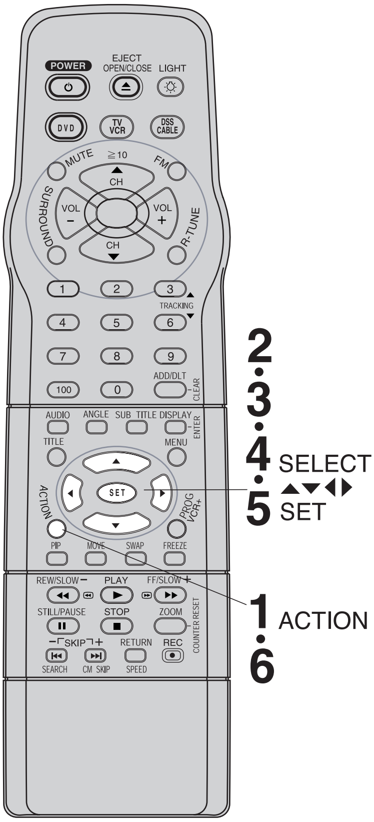


Redisplay SET UP CHANNEL screen to continue setup.

Press ACTION and go to page 26 (VCR Plus+ Channel Setup)

OR

to exit, press ACTION three times.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
2
3
4
5
SELECT ▲▼◀▶
SET
1
6
ACTION

VCR Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation.
The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

VCR Plus+ Channel Setup is...
necessary to program the unit with local channel information for proper VCR Plus+ operation.

Process of Recording

Connection ⇨ **Setup** ⇨ Programming

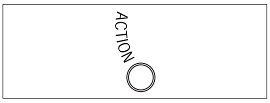
☑ Check list before you begin.

☐ It is necessary to enter TV mode by pressing TV/VCR before selecting “CH” on the MAIN MENU.

VCR Plus+ Channel Setup

At first, do Channel Setup Preparations below right.

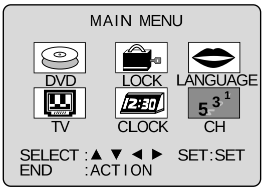
1



Display MAIN MENU.

Press ACTION*.

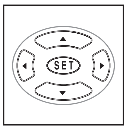
2



MAIN MENU

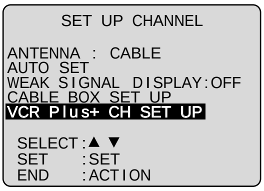
SELECT : ▲ ▼ ◀ ▶ SET:SET
END :ACTION

Display SET UP CHANNEL screen.



1) Press ▲▼◀ ▶ to select “CH.”
2) Press SET to display.

3

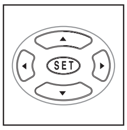


SET UP CHANNEL

ANTENNA : CABLE
AUTO SET
WEAK SIGNAL DISPLAY:OFF
CABLE BOX SET UP
VCR Plus+ CH SET UP

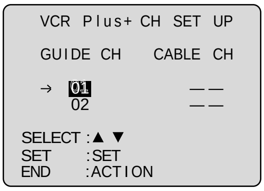
SELECT : ▲ ▼
SET :SET
END :ACTION

Select VCR Plus+ CH SET UP.



1) Press ▲▼ to select.
2) Press SET to display.

4



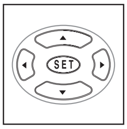
VCR Plus+ CH SET UP

GUIDE CH CABLE CH

→ 01 – –
02 – –

SELECT : ▲ ▼
SET :SET
END :ACTION

Enter VCR Plus+ channels.

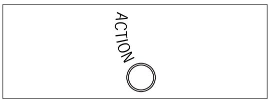


1) Press ▲▼ to scroll up/down the GUIDE CH column.
2) Press SET to move cursor to right column.
3) Press ▲▼ to change the CABLE CH number.
4) Press SET to set.

- Repeat step **4** until list is complete.

To Make Corrections
Press ▲▼ and SET to move to error, then ▲▼ to change, or ADD/DLT to erase number.

5

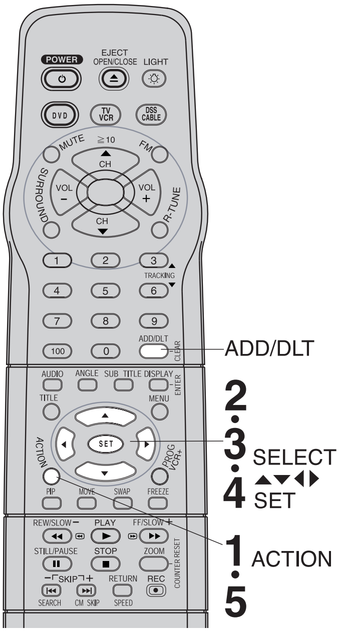


End the setup.

Press ACTION three times.

Notes

- Make each entry within 5 minutes or the unit will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.



Channel Setup Preparations

To complete step 4 left, make a local channel list (see example below.)

You will need the following:

- A normal TV and/or Cable stations line up and the channel numbers your receive them on.
- A list of Guide (VCR Plus+) channel numbers for stations you receive (see TV Guide and selected newspapers.)

1 Make a 3-column chart. In the left column, write all station names you receive.
2 In the middle column, write each station’s Guide (VCR Plus+) number.
3 In the right column, write the channel number your TV receives the station on.

< EXAMPLE ONLY >

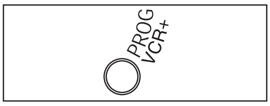
Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) Channel no.	Channel no. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	34	04
FOX	11	

VCR Plus+ System Programming

Process of Recording

Connection ⇨ Setup ⇨ **Programming**

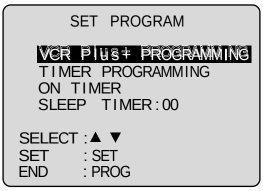
1



Display SET PROGRAM screen.

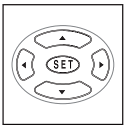
Press PROG/VCR+.

2



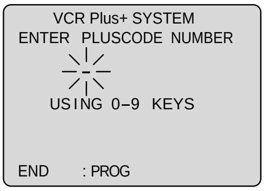
```
        SET  PROGRAM

   VCR Plus+ PROGRAMMING
   TIMER PROGRAMMING
   ON TIMER
   SLEEP  TIMER:00

SELECT :▲ ▼
SET    : SET
END    : PROG
```

Select VCR Plus+ PROGRAMMING.



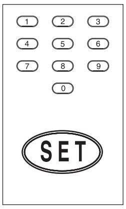
1) Press ▲▼ to select.
2) Press SET to display.

3



```
     VCR Plus+ SYSTEM
ENTER  PLUSCODE  NUMBER
        -
  USING 0-9  KEYS


END      : PROG
```

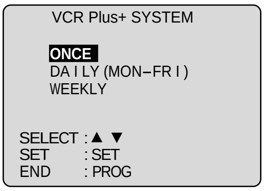
Enter PlusCode programming number.


1
2
3
4
5
6
7
8
9
0
SET

1) Press NUMBERED keys.
2) Press SET when finished.

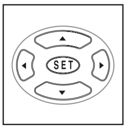
To Make Corrections
Press ◀ repeatedly to delete the PlusCode programming number.

4



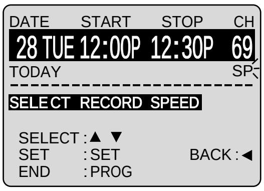
```
     VCR Plus+ SYSTEM

   ONCE
   DAILY(MON-FRI)
   WEEKLY


SELECT :▲ ▼
SET    : SET
END    : PROG
```

Set Record Frequency.



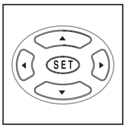
1) Press ▲▼ to select.
2) Press SET to set.

5



```
DATE     START     STOP    CH
28 TUE 12:00P  12:30P  69
TODAY                      SP
-------------------------
SELECT RECORD SPEED

 SELECT :▲ ▼
 SET    : SET         BACK :◀
 END    : PROG
```

Set Recording speed.
(See page 6.)

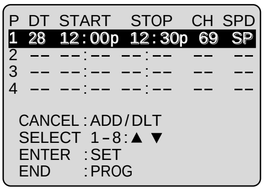


1) Press ▲▼ to select.
2) Press SET to set.

Select desired type
- Speed → SP,LP, or SLP

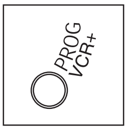
To Make Corrections
Press ◀ ▶ to move the cursor and ▲▼ to make the correction.

6



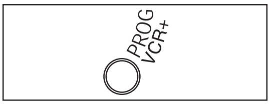
```
P  DT  START   STOP   CH  SPD
1  28  12:00p  12:30p  69  SP
2  --  --:--   --:--   --  --
3  --  --:--   --:--   --  --
4  --  --:--   --:--   --  --

 CANCEL :ADD/DLT
 SELECT  1-8:▲ ▼
 ENTER  :SET
 END    :PROG
```

End programming.



Press PROG/VCR+.

7



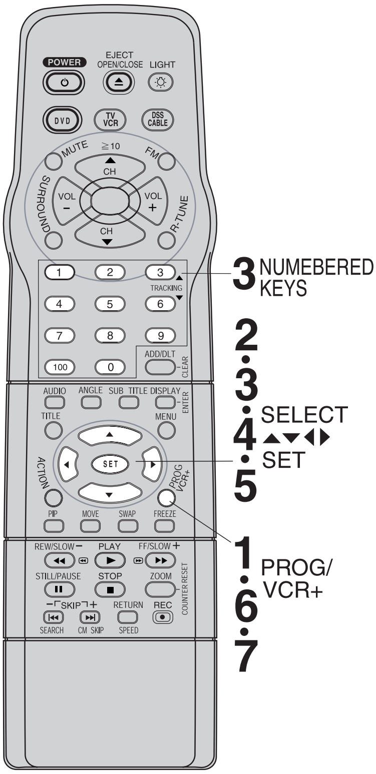
Exit this mode.

Press PROG/VCR+ twice.

- PROG TIMER indicator lights on the unit.

☑ Check list before you begin.

☐ The clock is set to correct time.
☐ VCR Plus+ System Setup is complete. (See pages 25, 26.)


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
SURROUND
CH
VOL
R-TUNE
1
2
3
4
5
6
7
8
9
100
0
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
3 NUMEBERED KEYS
2·3·4·5 SELECT ▲▼◀▶ SET
1·6·7 PROG/VCR+

Use normal Timer Recording steps if:
- a program PlusCode programming number is not listed.
- the program, such as a sporting event, may run over the scheduled stop time.

See page 23 to:
- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

Notes

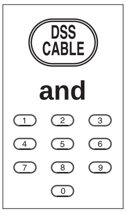
- If you're using a cable box, make sure that it is turned to the desired channel and the power is left on for timer recording.
- Avoid overlapping program times.
- Timer program memory capacity is 8. To add programs when memory is full, please first clear other programs. (See page 23.)

Cable Box Universal Remote Control Feature

Universal Remote Control Setup

1 **Find your DSS box or Cable box Brand Code Number from one of the charts on the next page.**

2

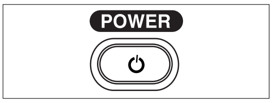

DSS CABLE
and
1
2
3
4
5
6
7
8
9
0

Setup remote.

1) Hold down DSS CABLE.
2) Press NUMBERED keys to enter code.

- Enter numbers as follows:
  e.g. For 02, enter 0, then 2.
  For 25, enter 2, then 5.
  For 102, enter 1, then 0, then 2.

3



Confirm code entry.

Press POWER* to turn selected unit ON or OFF.

- See below for a list of controllable functions in each mode.

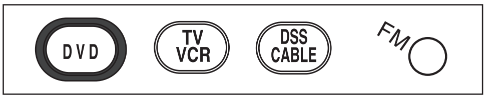
Notes

- The remote control will not operate all DSS receivers or Cable Boxes made by the manufacturers listed. If you get no results, your particular brand cannot be controlled.
- Please repeat the Universal Remote Control Setup after replacing remote control batteries.

Using the Universal Remote Control
(Available Buttons / Functions)

Once the remote control has been properly set up, you can select TV-VCR, FM, DVD, DSS or CABLE mode depending on which functions you wish to control. (See below.)

Press TV VCR, FM, DVD, or DSS CABLE on the remote control to select the desired mode. (See below for buttons available in each mode.)


DVD
TV VCR
DSS CABLE
FM

Set to TV VCR, FM, DVD:

All TV functions, as well as functions of TV-VCR, FM, or DVD.

Set to DSS CABLE:

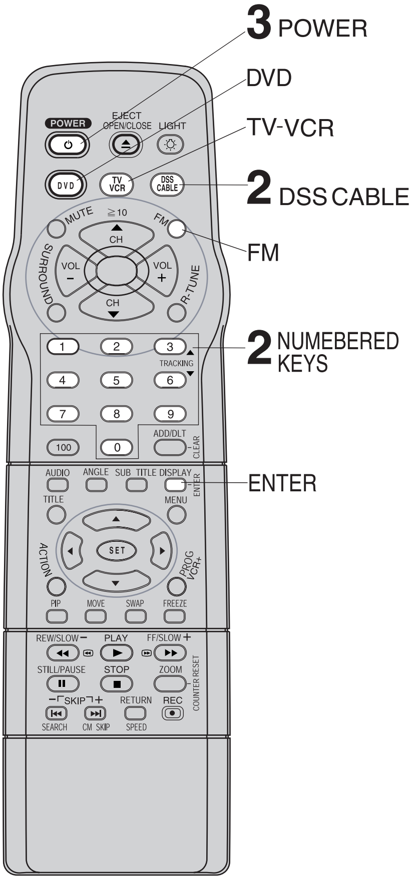
- Basic VCR functions, e.g. PLAY, REC, etc.
- CABLE/DSS functions, e.g. POWER, ENTER, NUMBERED keys (except 100 key), CH UP/DOWN.

Notes

- In DSS or CABLE mode, POWER, CH Up/Down, NUMBERED keys, ACTION, PROG/VCR+, DISPLAY/ENTER, SEARCH/SKIP-, R- TUNE, SELECT, SET, CM SKIP/SKIP+, COUNTER RESET/ ZOOM, ANGLE, AUDIO, TITLE, SUBTITLE, MENU, or ADD/DLT/CLEAR are not available. Press TV VCR, FM, DVD to use these functions.
- Due to changes in infra-red commands used by manufacturers, some brands have several codes. If your unit does not respond to the first code, please try the next one.
- In DSS or CABLE mode, it may be necessary to press ENTER after pressing NUMBERED keys for channel selection.
- Depending on your DSS receiver or Cable box brand, some of the functions listed may not be remote controllable.
- Some DSS receiver or Cable box brands require you to turn on the power manually.

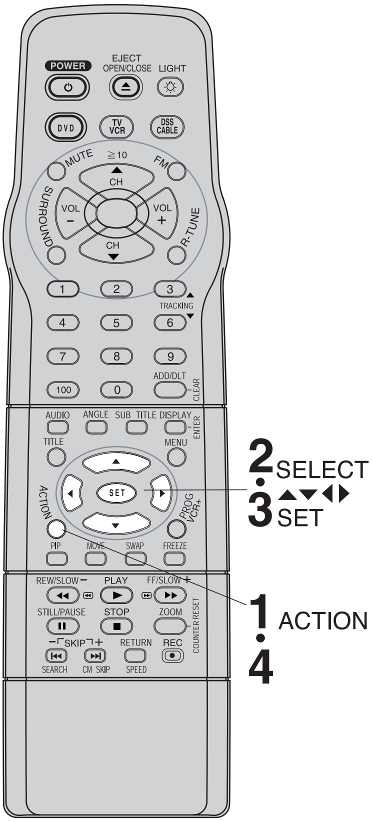
Universal Remote Control is...

The Remote Control may be set up to control some basic DSS or Cable box functions.

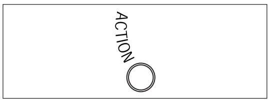

3 POWER
DVD
TV-VCR
2 DSS CABLE
FM
2 NUMEBERED KEYS
ENTER
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
TRACKING
ADD/DLT
100
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED

Remote Warning ON/OFF

When Universal Remote Control (previous page) is used, and this feature is set to “ON,” a warning appears whenever an invalid key is pressed in DSS or Cable mode.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
COUNTER RESET
2
SELECT
3
▲▼◀▶
SET
1
ACTION
4

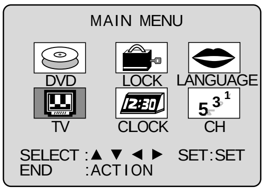
1



Display MAIN MENU.

Press ACTION.

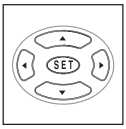
2


DVD
LOCK
LANGUAGE
TV
CLOCK
CH

MAIN MENU

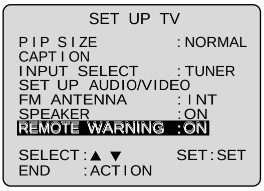
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

Display SET UP TV screen.



1) Press ▲▼◀▶ to select “TV.”
2) Press SET to display.

3

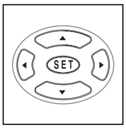


SET UP TV

PIP SIZE : NORMAL
CAPTION
INPUT SELECT : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA : INT
SPEAKER : ON
REMOTE WARNING : ON

SELECT : ▲ ▼ SET : SET
END : ACTION

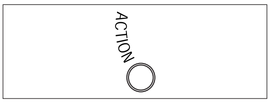
Select REMOTE WARNING.



1) Press ▲▼ to select.
2) Press SET to set “ON” or “OFF.”

- “OFF” → Remote warning will not appear even if invalid key is pressed.

4



Return to normal screen.

Press ACTION twice.

DSS Brand Code Numbers

Toshiba	90
Hitachi/ Hughes	91, 99
Primestar	92
Drake	93
Magnavox	94, 95
Uniden	94, 95
Optimus	94, 95
Panasonic	96
ProScan	97
RCA	97
SONY	98, 105

Cable Box Brand Code Numbers

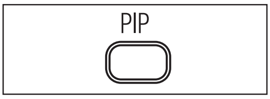
Archer	44, 06, 01, 120, 05, 63, 126
Cableview	29, 09, 01, 63, 120, 44, 42, 30, 52, 04, 124, 126
Citizen	44, 52, 30, 63, 42, 04, 124, 126
Curtis	08, 09, 25, 61, 53, 87
Century	44, 51, 75, 59, 126
Cabletenna	29, 09, 01, 63, 120, 44, 126
Cable Cinema	29, 09, 01, 63, 120, 44, 126
Diamond	29, 09, 01, 63, 120, 44, 126
Eagle	62, 40, 22, 13, 58, 20, 26, 107
Eastern	28, 29, 130
Explorer	08, 09, 25, 61, 53, 87
Gemini	30, 04, 124
General Electric	01, 57, 120
General Instruments	01, 84, 83, 34, 03, 02, 04, 55, 65, 66, 67, 68, 120, 106, 121, 122, 115, 117, 118, 124
Gerrard	44, 51, 75, 59
GC Electronics	44, 42, 63, 29, 30, 52, 04, 124, 126
Hamlin	41, 14, 15, 28, 102, 104, 103, 130
Hitachi	31
Jerrold	01, 84, 83, 34, 03, 02, 04, 55, 65, 66, 67, 68, 120, 106, 121, 122, 115, 117, 118, 124
Jasco	30, 04, 124
Macom	31
Magnavox	26, 112
Matsushita	17, 16, 08, 87, 109
Movietime	32, 39, 42, 44, 126, 38, 40
Maestro	74, 35
NEC	40, 19, 38, 32
NSC	40, 19, 38, 32
Novavision	08, 09, 25, 61, 53, 87
Next Level	01, 84, 83, 34, 03, 02, 04, 55, 65, 66, 67, 68, 120, 106, 121, 122
Oak	46, 11, 129, 101
Oak Sigma	46, 11, 129, 101
Panasonic	17, 16, 08, 87, 109
Philips	23, 24, 20, 13, 07, 50, 128, 129
Pioneer	06, 05, 12
Pulsar	04, 42, 63, 44, 30, 52, 124, 126
Quest	06, 05, 12
Radio Shack	44, 51, 75, 59, 126
RCA	17, 16, 08, 87, 109
Realistic	44, 51, 75, 59, 126
Recoton	44, 51, 75, 59, 126
Regal	41, 14, 15, 28, 102, 104, 103, 130
Regency	28, 29, 130
Rembrandt	44, 42, 63, 29, 01, 32, 39, 120, 126
Samsung	42, 06, 32, 05, 40
Scientific Atlanta	08, 09, 25, 61, 53, 87
Sheritech	27
Signal	26, 112
SL Marx	42, 06, 32, 40, 43, 44, 52, 63, 126
Sprucer	17, 16, 08, 87, 109
Standard Components	32, 39, 42, 44, 126
Stargate	04, 42, 32, 40, 63, 44, 30, 52, 06, 124, 126
Sylvania	19, 18
Teknika	74, 35
Telecaption	77, 127
Teleview	40, 19, 38, 32, 42, 06
Texscan	19, 18
Tocom	34, 33, 01, 42, 66, 120
Toshiba	36
Unika	44, 42, 63, 29, 01, 126, 120
Universal	52, 43, 44, 63, 42, 126
Viewstar	62, 40, 22, 13, 58, 20, 26, 107
Videoway	07, 23, 50, 129
Vidtek	64
Zenith	07, 23, 50, 129

Picture in Picture (PIP) Operation

You can view two pictures simultaneously using Picture in Picture (PIP) display function.

Display Picture in Picture (PIP) screen

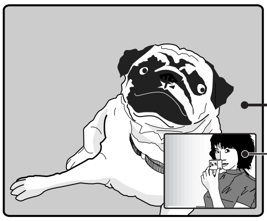
A



Set PIP.

Press PIP.

B



< Example >

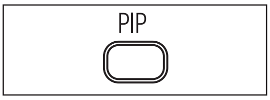
PIP screen is displayed on the Main Picture screen.

Main Picture

Picture in Picture (PIP)

- The TV channel last viewed on the PIP screen is displayed on the PIP screen.

C

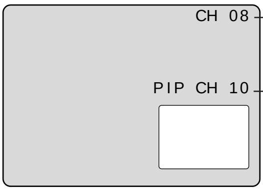


Return to the normal screen.

Press PIP.

Select channel / Adjust Volume in PIP mode

In PIP mode, select a channel using CH ▲▼ or NUMBERED keys and adjust the volume using VOL + - for the Main Picture only. To select the PIP channel, first press SWAP to switch the PIP to the Main Picture, then select (see page 31.)

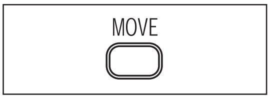

CH 08
PIP CH 10

Main Picture CH Position

PIP CH Position

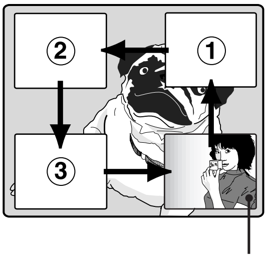
Move screen

You can move the PIP screen to four positions.

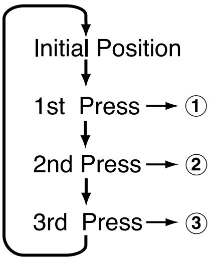


Select PIP position.

Press MOVE repeatedly to select PIP position.

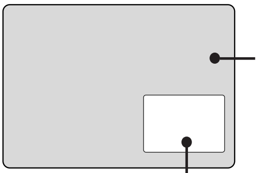


Initial Position


Initial Position
1st Press → ①
2nd Press → ②
3rd Press → ③

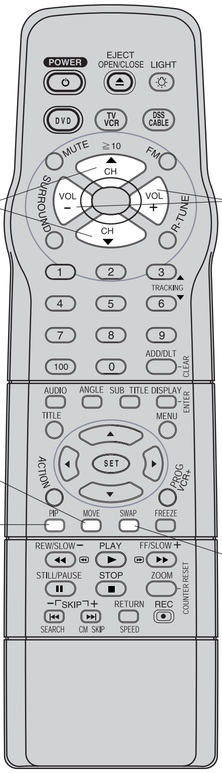
Possible Source Combinations for Main Picture and PIP Screen

The Main Picture source and the PIP Screen source can be displayed at the same time.



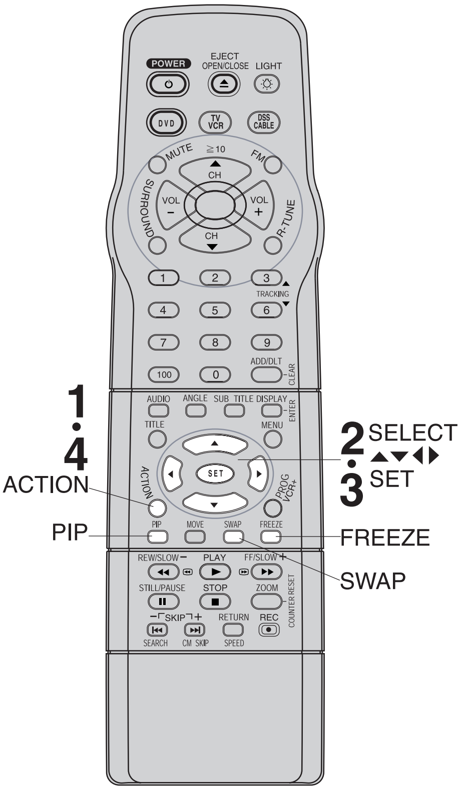
Main Picture Possible Source:
Current CH or Last CH
DVD
VCR
LINE 1 or LINE 2

PIP Screen Possible Source:
Current CH or Last CH
DVD
VCR
LINE 1 or LINE 2


CH UP/DOWN
VOL UP/DOWN
MOVE
PIP A C
SWAP
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
SURROUND
R-TUNE
CH
VOL
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED

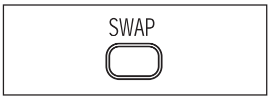
Notes

- The audio is from the Main picture only.
- PIP is not available in FM mode, while V-Chip control is active, while a LINE input has no signal, or while a blue-back (PROG, ACTION, MENU) screen is displayed.
- PIP position and size you set will be retained.
- The MOVE and SWAP buttons are inoperative when PIP screen is off.


1
4
ACTION
PIP
2
SELECT
▲▼◀▶
3
SET
FREEZE
SWAP

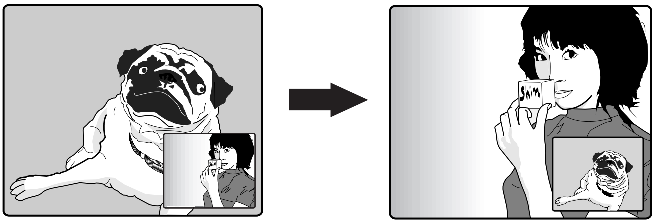
SWAP Picture

You can switch the PIP and Main Picture source.



Swap the Picture source.

Press SWAP.

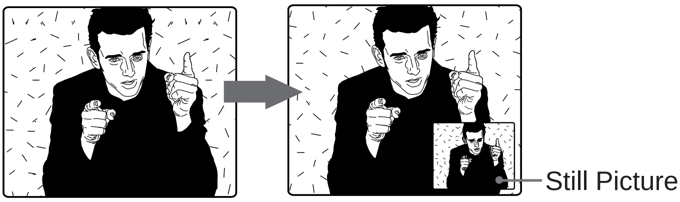


FREEZE Picture into PIP

You can create a freeze frame PIP of the Main Picture.

Freeze the Main Picture as a PIP screen.

Press FREEZE.


Still Picture

Change PIP back to a moving picture.

Press FREEZE.

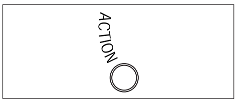
- With PIP displayed, each press of FREEZE will freeze and unfreeze the PIP.

To remove PIP, press the PIP button.

Picture in Picture (PIP) SIZE Setup

You can choose “NORMAL” or “SMALL” PIP size.

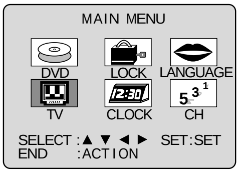
1



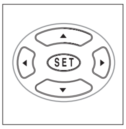
Display MAIN MENU.

Press ACTION*.

2

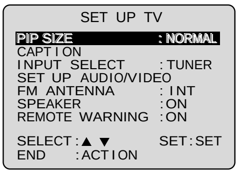

MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT :▲ ▼ ◀ ▶
SET:SET
END :ACTION

Display SET UP TV screen.



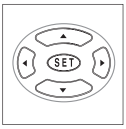
1) Press ▲▼◀ ▶ to select “TV.”
2) Press SET to display.

3



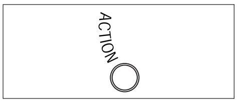
```
SET UP TV
PIP SIZE          : NORMAL
CAPTION
INPUT SELECT      : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA        : INT
SPEAKER           : ON
REMOTE WARNING    : ON

SELECT : ▲ ▼      SET : SET
END    : ACTION
```

Select PIP SIZE .



1) Press ▲▼ to select “PIP SIZE.”
2) Press SET to set “NORMAL” or “SMALL.”

4



End setup.

Press ACTION twice.

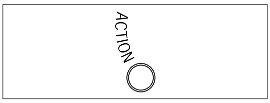
Notes

- The FREEZE function works the same way during VCR or DVD playback.
- When DVD and VCR pictures are played back on Main Picture and PIP, pressing FREEZE only freezes the PIP screen while actual playback continues. Cancelling freeze frame restores playback picture in progress.
- A freeze frame PIP reverts to a normal (moving) picture when the PIP and the Main Picture are swapped.

Closed Caption System

Closed Caption Mode Feature

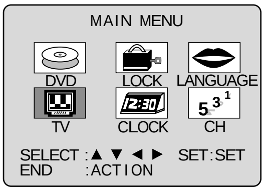
1



Display MAIN MENU.

Press ACTION*.

2



MAIN MENU

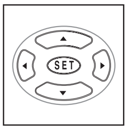
DVD LOCK LANGUAGE

TV CLOCK CH

SELECT : ▲ ▼ ◀ ▶ SET : SET

END : ACTION

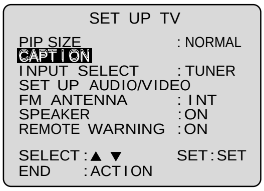
Display SET UP TV screen.



1) Press ▲▼◀ ▶ to select “TV.”

2) Press SET to display.

3



SET UP TV

PIP SIZE : NORMAL

CAPTION

INPUT SELECT : TUNER

SET UP AUDIO/VIDEO

FM ANTENNA : INT

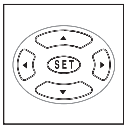
SPEAKER : ON

REMOTE WARNING : ON

SELECT : ▲ ▼ SET : SET

END : ACTION

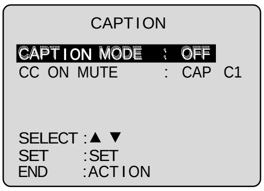
Display CAPTION screen.



1) Press ▲▼ to select.

2) Press SET to display.

4



CAPTION

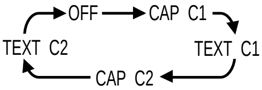
CAPTION MODE : OFF

CC ON MUTE : CAP C1

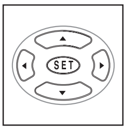
SELECT : ▲ ▼

SET : SET

END : ACTION


OFF
CAP C1
TEXT C1
CAP C2
TEXT C2

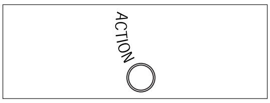
Select CAPTION MODE.



1) Press ▲▼ to select.

2) Press SET repeatedly to select caption mode.

5



Return to the normal screen.

Press ACTION three times.

Recording and Playing Back a Closed Caption/ Text Program

Record:

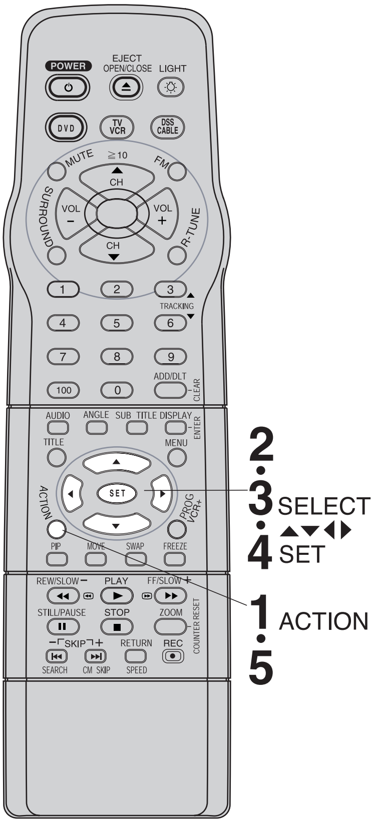
Record normally. Closed Caption/Text signal, if present, is recorded automatically.

Playback:

Start playback. Do above steps to select desired caption mode.

Closed Caption is ...

This multi-use system not only allows the hearing impaired to enjoy selected programs, but also makes useful information from TV stations available to everyone.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
CH
VOL
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
ACTION
SET
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
2
3 SELECT ▲▼◀▶
4 SET
1 ACTION
5

Closed Caption Modes you can Choose

Caption Mode: CAP C1 or C2

A narration of selected TV programs is displayed.

Check TV program listings for C. C. (Closed Caption) broadcasts.

Caption Mode: TEXT C1 or C2

The lower half of the screen will be blocked out. When the TV station broadcasts information, such as program listings, it will appear in this space.

Caption Mode: OFF

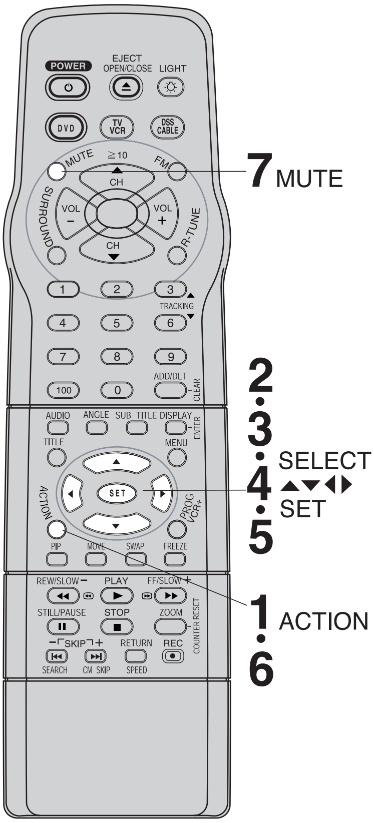
Closed Caption /Text narration will not be displayed.

NOTE:

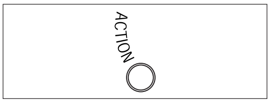
The closed caption or text signal may be broadcast over C1, C2, or both. Also, text contents can vary so you may wish to try different settings.

Caption On Mute Feature

Closed Caption narration, if available, is displayed when MUTE button is pressed for silence.



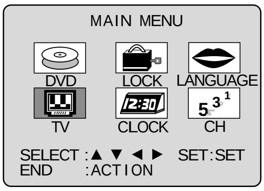
1



Display MAIN MENU.

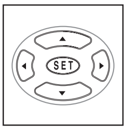
Press ACTION.

2



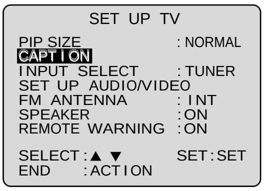
MAIN MENU
DVD LOCK LANGUAGE
TV CLOCK CH
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

Display SET UP TV screen.



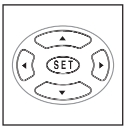
1) Press ▲▼◀▶ to select "TV."
2) Press SET to display.

3



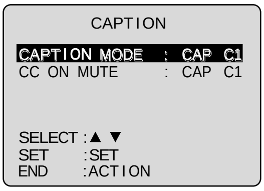
SET UP TV
PIP SIZE : NORMAL
CAPTION
INPUT SELECT : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA : INT
SPEAKER : ON
REMOTE WARNING : ON
SELECT : ▲ ▼ SET : SET
END : ACTION

Display CAPTION screen.



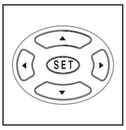
1) Press ▲▼ to select.
2) Press SET to display.

4



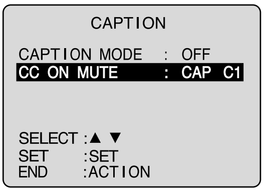
CAPTION
CAPTION MODE : CAP C1
CC ON MUTE : CAP C1
SELECT : ▲ ▼
SET : SET
END : ACTION

Set CAPTION MODE OFF.



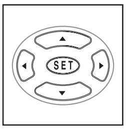
1) Press ▲▼ to select.
2) Press SET repeatedly to select "OFF."

5

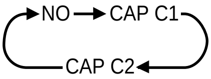


CAPTION
CAPTION MODE : OFF
CC ON MUTE : CAP C1
SELECT : ▲ ▼
SET : SET
END : ACTION

Select CC ON MUTE.

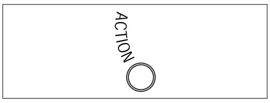


1) Press ▲▼ to select.
2) Press SET repeatedly to select desired caption mode.



- Each press of SET will change the display as shown at left.
- The caption may be broadcast over CAP C1 or C2.

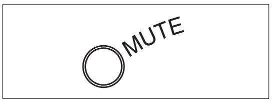
6



Return to the normal screen.

Press ACTION three times.

7



Mute sound, display closed captioning.

Press MUTE to mute the sound.

- To cancel, press MUTE again.

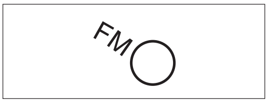
Notes

- **When a disc supporting closed caption is used, the subtitle and the closed caption may overlap. In this case, turn the subtitle or caption on mute mode off. (See page 52.)**
- **Closed Captioning can only be displayed on the Main Picture screen, and not the PIP.**

FM Radio

FM Radio Setup

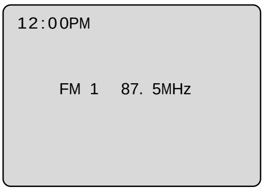
1



Display FM radio mode.

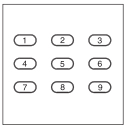
Press FM on the remote or TV/FM on the unit.

2


12:00PM

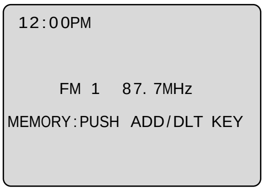
FM 1 87. 5MHz

Select the FM number.



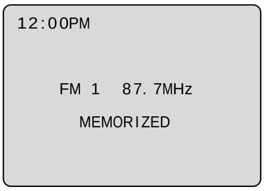
Press a NUMBERED key* (1~9.)

3


12:00PM

FM 1 87. 7MHz

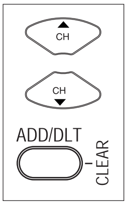
MEMORY:PUSH ADD/DLT KEY


12:00PM

FM 1 87. 7MHz

MEMORIZED

Set the radio station.


CH
CH
ADD/DLT
CLEAR

1) Press CH ▲▼ to select the desired radio station.
   (Each press changes frequency 200 kHz.)
2) Press ADD/DLT to set.

Quick Station Scan

Hold down CH ▲ or ▼ for a few seconds, then release to scan for FM stations in your area.

- To cancel, press CH ▲ or ▼ while in search mode.

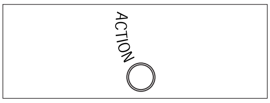
To Make Corrections,
select station with a NUMBERED key, then do step **3** again.

To exit FM mode,
press TV/VCR on the remote or TV/FM on the unit.

FM ANTENNA Setup

Make sure FM tuning is done correctly (See FM Radio Setup.)

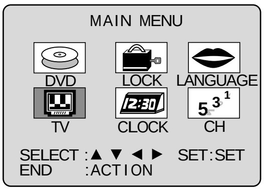
a



Display MAIN MENU.

Press ACTION.

b

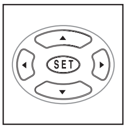

MAIN MENU

DVD LOCK LANGUAGE

TV CLOCK CH

SELECT :▲ ▼ ◀ ▶ SET:SET
END :ACTION

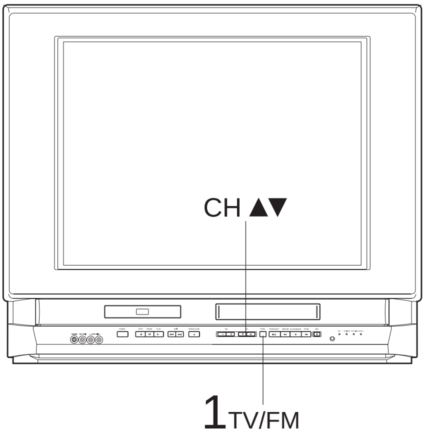
Display SET UP TV screen.

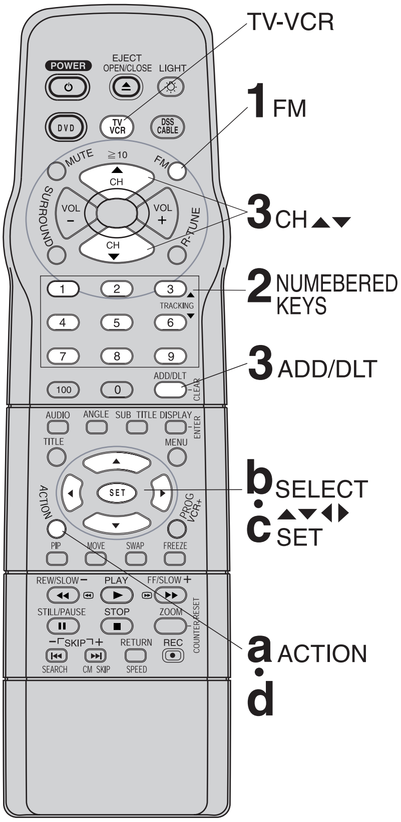


1) Press ▲▼◀ ▶ to select “TV.”
2) Press SET to display.

FM Radio is ...

This unit has an FM radio with built-in antenna, 9 station preset, and a band range of 87.5 ~ 108.1 MHz. You can even set the On-Timer (page 36) to wake up to your favourite radio station.

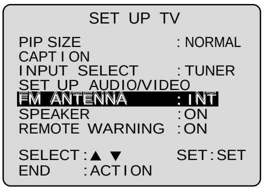



TV-VCR
1 FM
3 CH ▲▼
2 NUMEBERED KEYS
3 ADD/DLT
b SELECT ▲▼◀▶
c SET
a ACTION
d
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
CLEAR
100
0
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED

Continued on the next page...

*Important: if a remote control button does not work when pressed, press the FM button on the remote and try the button again.

C

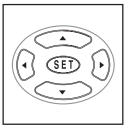


SET UP TV

PIP SIZE : NORMAL
CAPTION
INPUT SELECT : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA : INT
SPEAKER : ON
REMOTE WARNING : ON

SELECT : ▲ ▼ SET : SET
END : ACTION

Select FM ANTENNA.

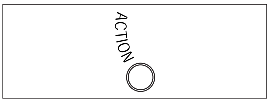


1) Press ▲▼ to select.
2) Press SET to select "INT (INTERNAL)" or "EXT (EXTERNAL)" whichever sounds the best.

- **For cable TV users → "INT"**
- **For antenna users → "EXT"**

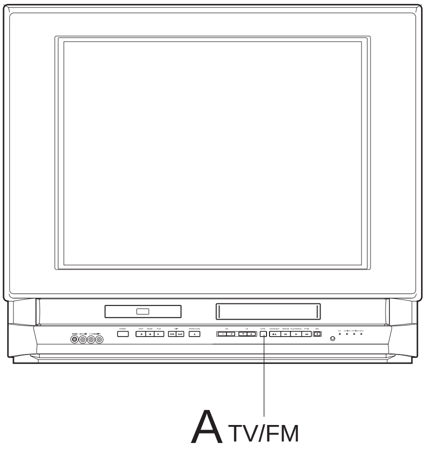
---

d



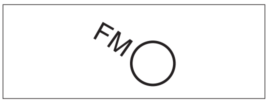
End setup.

Press ACTION twice to exit.



Using FM Radio

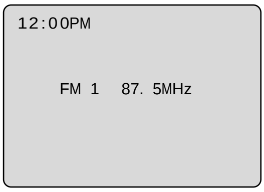
A



Display FM radio mode.

Press FM on the remote or TV/FM on the unit.

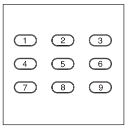
B



12:00PM

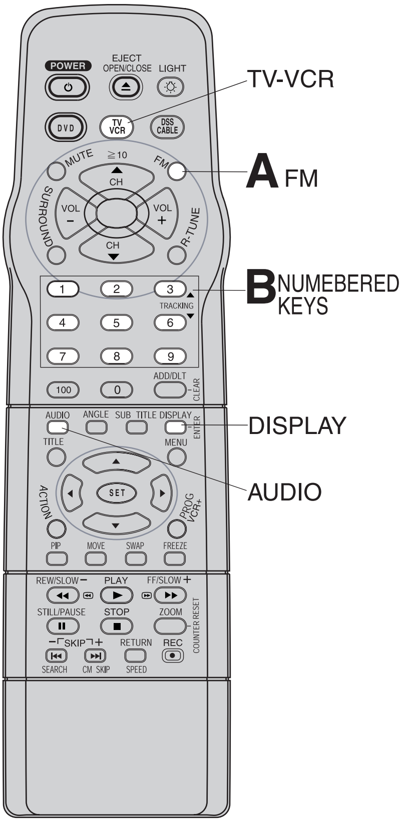
FM 1 87. 5MHz

Select the FM number.



Press a NUMBERED key (1~9) to select a preset station (see steps **2** and **3** on the previous page.)

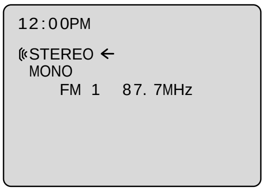
To cancel, press TV/VCR on the remote or TV/FM on the unit.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
TV-VCR
MUTE
≧10
FM
A FM
CH
VOL –
VOL +
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
B NUMEBERED KEYS
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
DISPLAY
AUDIO
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW–
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
–SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED

Notes

Once stations are set, the selected station and current time are displayed when FM Radio mode is entered. To remove time, press DISPLAY.
If DISPLAY is pressed, the unit status screen appears.

Select Audio Mode for FM Radio



12:00PM

STEREO ←
MONO
FM 1 87. 7MHz

Select "STEREO" or "MONO."

Press AUDIO repeatedly in FM Radio mode.

Notes

- FM radio cannot be recorded on a Video cassette.
- You cannot select FM Radio mode during playback or record, or while a blue back screen (PROG, ACTION, MENU) is displayed.
- You may get better reception by repositioning the unit.
- PIP function cannot be used while in FM mode.

TV Timer Features

*Important: if a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

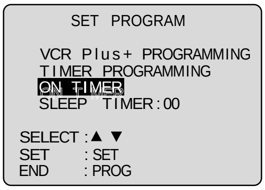
ON-TIMER with Alarm

This unit can be set to automatically power on in one of 4 modes (TV, VCR Playback, FM radio, or DVD/Video CD/CD.) You can also combine the On-Timer with a one minute alarm that gradually increases in volume.

1 Display SET PROGRAM screen.

Press PROG/VCR+*.

2



SET PROGRAM

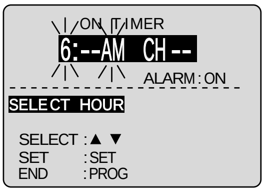
VCR Plus+ PROGRAMMING
TIMER PROGRAMMING
ON TIMER
SLEEP TIMER : 00

SELECT : ▲ ▼
SET : SET
END : PROG

Select ON TIMER.

1) Press ▲▼ to select.
2) Press SET to display.

3



ON TIMER
6:--AM CH--
ALARM : ON
SELECT HOUR

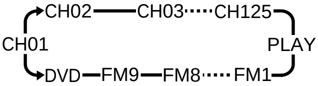
SELECT : ▲ ▼
SET : SET
END : PROG

Set the ON-TIMER TIME.

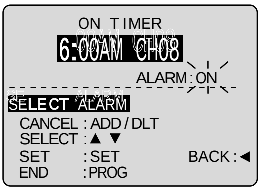
1) Press ▲▼ to select.
2) Press SET to set.

- Make sure a tape is inserted if Playback mode is selected.
- Make sure a disc is inserted if DVD(DVD/Video CD/CD) mode is selected.
- See “FM Radio” on pages 34 and 35 for instructions on how to preset FM stations.

- ON-TIMER mode selection order



4



ON TIMER
6:00AM CH08
ALARM : ON
SELECT ALARM
CANCEL : ADD / DLT
SELECT : ▲ ▼
SET : SET
BACK : ◀
END : PROG

Set Alarm.

Press ▲▼ to select “ON” or “OFF.”

When “ON” is selected,
an alarm will gradually increase in volume for one minute or until cancelled by pressing any button (including VOL + −).

To Make Corrections,
use ▲▼ and ◀ ▶ to move back and correct as necessary.

5 Set ON TIMER.

Press PROG/VCR+.

- “ON TIMER SET” is displayed.
- ON TIMER indicator lights on the unit.

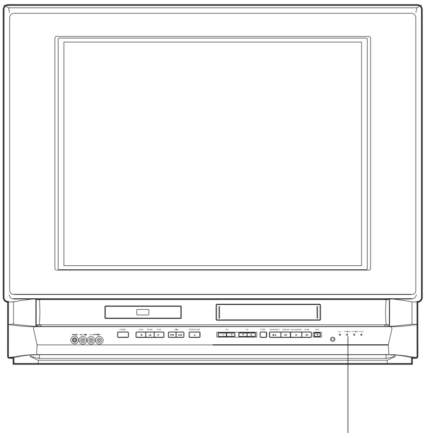
To Cancel ON-TIMER set,
repeat steps **1** and **2**. Then, in step **3** press ADD/DLT to clear the time. Now, press PROG/VCR+ to end. “ON TIMER END” appears on-screen for a few seconds.

Note

If no button on the remote or unit (including a button used to turn off the alarm) is pressed within 60 minutes after unit turns itself on, it will turn itself back off.

☑ **Check list before you begin.**

☐ The clock is set to correct time.



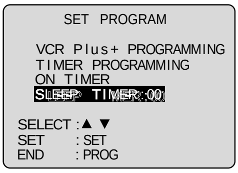
Sleep Timer

This unit can be set for auto power off.

a Display SET PROGRAM screen.

Press PROG/VCR+.

b



SET PROGRAM

VCR Plus+ PROGRAMMING
TIMER PROGRAMMING
ON TIMER
SLEEP TIMER : 00

SELECT : ▲ ▼
SET : SET
END : PROG

Set SLEEP TIMER.

1) Press ▲▼ to select SLEEP TIMER.
2) Press SET repeatedly to select the desired time.

SLEEP TIMER 30 → 60 → 90 → 00

To cancel, press SET repeatedly until 00 appears.

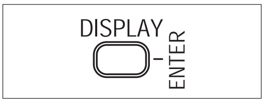
c Return to normal screen.

Press PROG/VCR+.

- Pressing DISPLAY with sleep timer set displays remaining time.

VCR Status & Clock Display

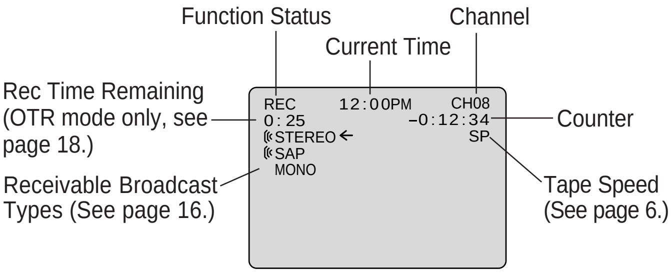
VCR Status & Clock Display


DISPLAY
ENTER

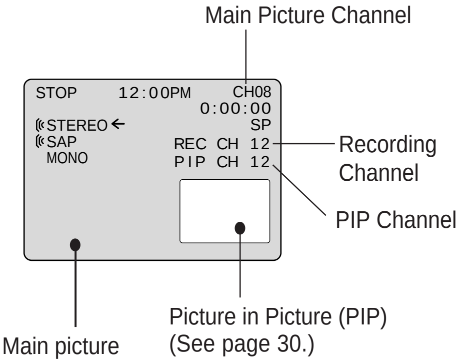
To display or remove the overlay.

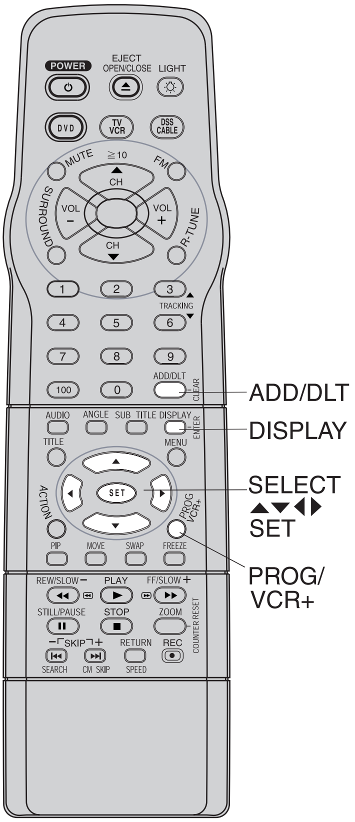
Press DISPLAY.

Normal screen


Function Status
Channel
Current Time
Rec Time Remaining (OTR mode only, see page 18.)
Receivable Broadcast Types (See page 16.)
Counter
Tape Speed (See page 6.)
REC
12:00PM
CH08
0: 25
-0:12:34
STEREO
SAP
MONO
SP

Picture in Picture (PIP) screen


Main Picture Channel
STOP
12:00PM
CH08
0:00:00
STEREO
SAP
MONO
SP
REC CH 12
PIP CH 12
Recording Channel
PIP Channel
Main picture
Picture in Picture (PIP) (See page 30.)

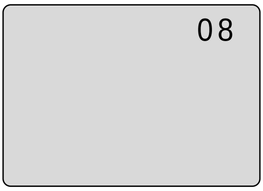

POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
VOL
CH
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
COUNTER RESET
SEARCH
CM SKIP
SPEED
ADD/DLT
DISPLAY
SELECT
SET
PROG/ VCR+

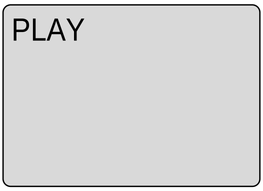
Blue Screen Display

Whenever a blank section of a tape comes up in Play mode, or when the selected channel has no broadcast signal with the **“**Weak Signal Display ON/OFF**”** (see page 47) set to **“**OFF,**”** the TV screen will turn solid blue.

Channel & Function Display

When a function button is pressed (PLAY, FF, etc.) or you change channels, the unit mode or channel number will be displayed.





V-Chip Control Feature

V-Chip Control Feature is...
This unit has a built-in V-Chip Control which allows you to block unwanted TV usage based on US MOVIES, US TV PROGRAMS, CANADIAN ENGLISH Language and CANADIAN FRENCH Language Ratings.

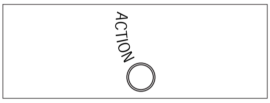
Process of V-Chip Control Feature

Enter Code ⇨ **Setup** ⇨ **Blocking**

Enter Secret Code

A 4-digit code must be entered to view a blocked program or change rating settings.

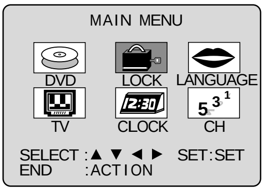
1



Display MAIN MENU.

Press ACTION*.

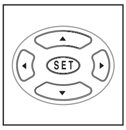
2


DVD
LOCK
LANGUAGE
TV
CLOCK
CH

MAIN MENU

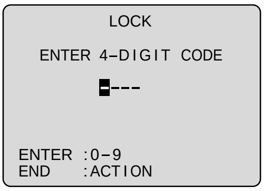
SELECT : ▲ ▼ ◄ ► SET : SET
END : ACTION

Display LOCK screen.



1) Press ▲▼◀▶ to select "LOCK."
2) Press SET to display.

3



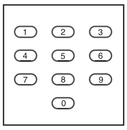
LOCK

ENTER 4–DIGIT CODE

■ – – –

ENTER : 0–9
END : ACTION

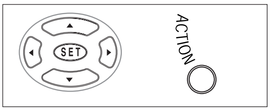
Enter your secret code.


1
2
3
4
5
6
7
8
9
0

1) Press NUMBERED keys.
2) Enter same secret code again for confirmation.
- Step 2) not necessary when changing rating or secret code.
- Take care that you are not observed entering the secret code.

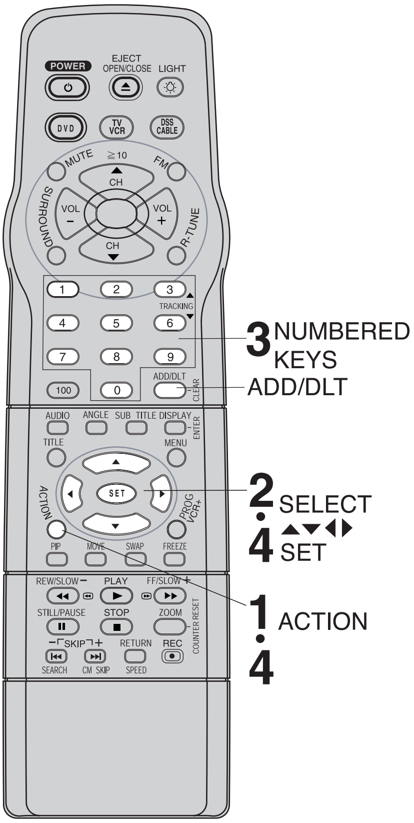
To Make Corrections
Press ◀ repeatedly to move the cursor. Press NUMBERED keys to make the correction.

4



Display LOCK menu for rating screen.

Press SET and go to
page 39 (US MOVIES Ratings), or
page 40 (US TV PROGRAMS Ratings)
page 41 (CANADIAN ENGLISH Ratings)
page 42 (CANADIAN FRENCH Ratings)
page 60 (DVD Lock Ratings)
OR
to exit, press ACTION twice.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
CH
VOL
ADD/DLT
ACTION
SET
3 NUMBERED KEYS
ADD/DLT
2 · 4 SELECT ▲▼◀▶ SET
1 · 4 ACTION

Change your secret code
- You will need your current code.

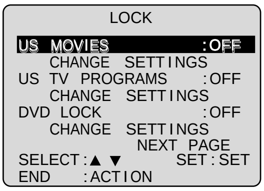
Do step 1 and 2 above. Enter current secret code.
Press ADD/DLT to clear the code. Do step 3 and 4 to enter new code.

Notes
- DO NOT forget your secret code.
- Once ratings are set, restricted tapes or programs cannot be accessed unless the secret code is entered.

Setup US MOVIES Ratings

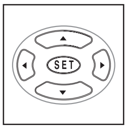
If LOCK menu is not displayed, do "Enter Secret Code" steps on page 38.

1



```
              LOCK
US  MOVIES                :OFF
     CHANGE  SETTINGS
US  TV  PROGRAMS          :OFF
     CHANGE  SETTINGS
DVD  LOCK                 :OFF
     CHANGE  SETTINGS
                  NEXT  PAGE
SELECT:▲ ▼          SET:SET
END     :ACTION
```

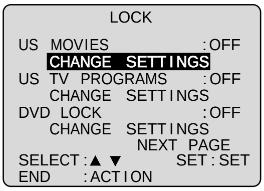
Select US MOVIES.



1) Press ▲▼ to select.
2) Press SET to set "ON" or "OFF."

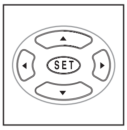
- ■ **"ON" → V-Chip Control is activated.**
- ■ **"OFF" → V-Chip Control is deactivated.**

2



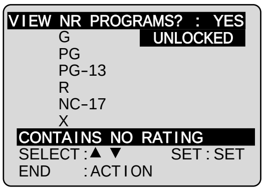
```
              LOCK
US  MOVIES                :OFF
     CHANGE  SETTINGS
US  TV  PROGRAMS          :OFF
     CHANGE  SETTINGS
DVD  LOCK                 :OFF
     CHANGE  SETTINGS
                  NEXT  PAGE
SELECT:▲ ▼          SET:SET
END     :ACTION
```

Select CHANGE SETTINGS.



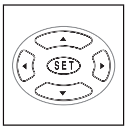
1) Press ▲▼ to select.
2) Press SET to display.

3



```
VIEW  NR  PROGRAMS?  :  YES
        G         UNLOCKED
        PG
        PG-13
        R
        NC-17
        X
CONTAINS  NO  RATING
SELECT:▲ ▼         SET:SET
END     :ACTION
```

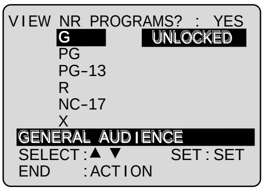
Select VIEW NR PROGRAMS?.



1) Press ▲▼ to select.
2) Press SET to set "YES" or "NO."

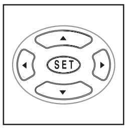
NR (Not Rated) PROGRAMS
Some movies, such as old movies or foreign movies usually have no ratings.

4



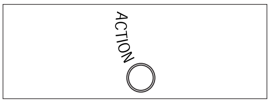
```
VIEW  NR  PROGRAMS?  :  YES
        G         UNLOCKED
        PG
        PG-13
        R
        NC-17
        X
GENERAL  AUDIENCE
SELECT:▲ ▼         SET:SET
END     :ACTION
```

Select ratings to be blocked. (See right.)



1) Press ▲▼ to select.
2) Press SET to set "LOCKED" or "UNLOCKED."

5



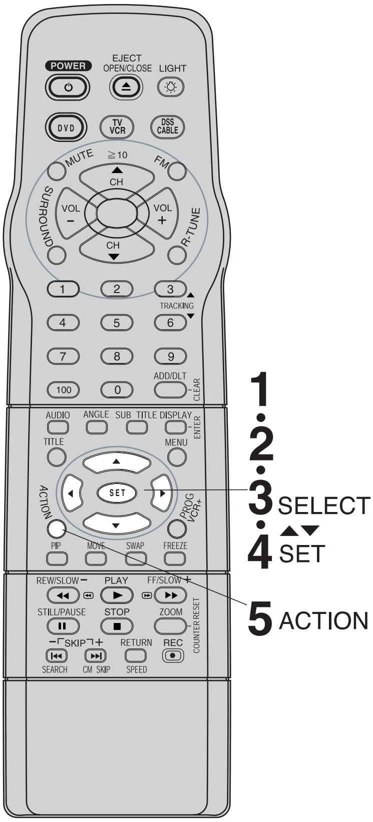
Redisplay LOCK menu to continue setup.

Press ACTION and go to page 40 (US TV PROGRAMS Ratings)
OR
to exit, press ACTION three times.

Note
- **Some rental movies do not include V-Chip data.**

Process of V-Chip Control Feature

Enter Code ⇨ **Setup** ⇨ **Blocking**


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL −
VOL +
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB
TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
−SKIP+
RETURN
REC
COUNTER RESET
SEARCH
CM SKIP
SPEED
1
2
3 SELECT ▲▼
4 SET
5 ACTION

US MOVIES Ratings

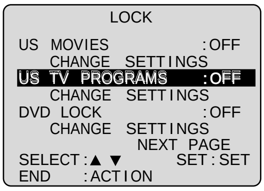
G	**GENERAL AUDIENCE:** All ages admitted.
PG	**PARENTAL GUIDANCE:** Some material may not be suitable for children.
PG-13	**PARENTS CAUTIONED:** Some material may be inappropriate for children under 13.
R	**RESTRICTED:** Children under 17 must be accompanied by a parent or adult.
NC-17	**OVER AGE 17 ONLY:** No one 17 and under admitted.
X	**ADULTS ONLY:**

V-Chip Control Feature (continued)

Setup US TV PROGRAMS Ratings

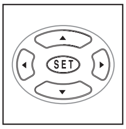
If LOCK menu is not displayed, do “Enter Secret Code” steps on page 38.

1



```
              LOCK
US  MOVIES                 :OFF
     CHANGE  SETTINGS
US  TV  PROGRAMS         :OFF
     CHANGE  SETTINGS
DVD  LOCK                  :OFF
     CHANGE  SETTINGS
                   NEXT  PAGE
SELECT:▲ ▼              SET:SET
END      :ACTION
```

Select US TV PROGRAMS.

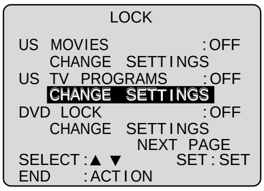


1) Press ▲▼* to select.

2) Press SET to set “ON” or “OFF.”

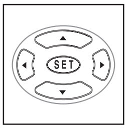
- **“ON” ➔ V-Chip Control is activated.**
- **“OFF” ➔ V-Chip Control is deactivated.**

2



```
              LOCK
US  MOVIES                 :OFF
     CHANGE  SETTINGS
US  TV  PROGRAMS         :OFF
     CHANGE  SETTINGS
DVD  LOCK                  :OFF
     CHANGE  SETTINGS
                   NEXT  PAGE
SELECT:▲ ▼              SET:SET
END      :ACTION
```

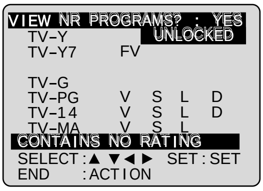
Select CHANGE SETTINGS.



1) Press ▲▼ to select.

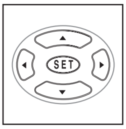
2) Press SET to display.

3



```
VIEW NR PROGRAMS?  :  YES
  TV–Y              UNLOCKED
  TV–Y7       FV

  TV–G
  TV–PG       V   S   L   D
  TV–14       V   S   L   D
  TV–MA       V   S   L
CONTAINS NO RATING
SELECT:▲ ▼◀ ▶     SET:SET
END     :ACTION
```

Select VIEW NR PROGRAMS?.

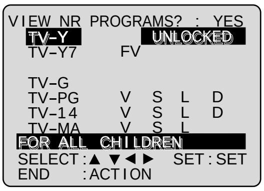


1) Press ▲▼ to select.

2) Press SET to set “YES” or “NO.”

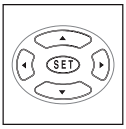
NR (Not Rated) PROGRAMS
Some TV shows, such as news, sports, weather, bulletins, emergency information usually have no ratings.

4



```
VIEW NR PROGRAMS?  :  YES
  TV–Y              UNLOCKED
  TV–Y7       FV

  TV–G
  TV–PG       V   S   L   D
  TV–14       V   S   L   D
  TV–MA       V   S   L
FOR ALL CHILDREN
SELECT:▲ ▼◀ ▶     SET:SET
END     :ACTION
```

Select ratings to be blocked. (See right.)



1) Repeatedly Press ▲▼ to select.

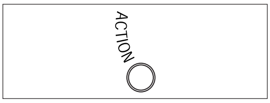
2) Press SET to set “LOCKED” or “UNLOCKED.”

Note

You may select from standard TV ratings (chart 1), or customize to a specific content rating (chart 2).

- Ratings which are highlighted in Green will be blocked; those not highlighted (white letters), will not be blocked.

5



Exit this mode.

Press ACTION three times.

Process of V-Chip Control Feature

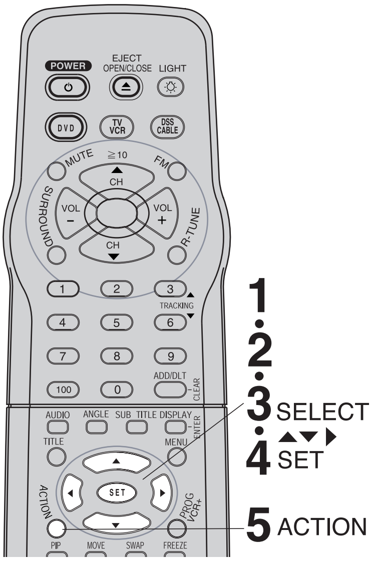
Enter Code ⇨ **Setup** ⇨ Blocking

US TV PROGRAMS Ratings: Chart 1

TV-Y	FOR ALL CHILDREN: Content specifically geared to young viewers ages 2-6.
TV-Y7	FOR AGE 7 AND OLDER: May contain mild physical or comedic violence which may frighten children under 7.
TV-G	GENERAL AUDIENCE: Contains little or no violence, strong language, or sexual dialogue or situations.
TV-PG	PARENTAL GUIDANCE: May contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
TV-14	PARENTS CAUTIONED: May contain sophisticated themes, sexual situations, strong language, and more intense violence.
TV-MA	MATURE AUDIENCE: May contain mature themes, profane language, graphic violence, and sexual situations.

US TV PROGRAMS Ratings: Chart 2

FV	Fantasy Violence
V	Violence
S	Sexual Situations
L	Adult Language
D	Sexually Suggestive Dialogue


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL –
VOL +
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
1
2
3 SELECT ▲▼▶
4 SET
5 ACTION

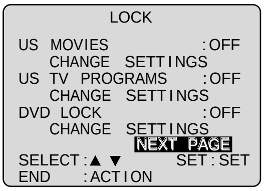
Setup CANADIAN ENGLISH Language Ratings

If LOCK menu is not displayed, do "Enter Secret Code" steps on page 38.

Process of V-Chip Control Feature

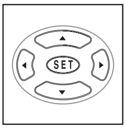
Enter Code ⇨ **Setup** ⇨ **Blocking**

1



```
                LOCK
US  MOVIES                  :OFF
    CHANGE  SETTINGS
US  TV  PROGRAMS            :OFF
    CHANGE  SETTINGS
DVD  LOCK                   :OFF
    CHANGE  SETTINGS
                      NEXT  PAGE
SELECT : ▲ ▼            SET : SET
END      : ACTION
```

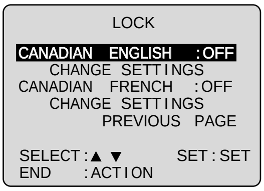
Select NEXT PAGE.



1) Press ▲▼ to select.

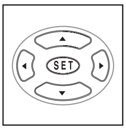
2) Press SET display.

2



```
                LOCK
CANADIAN   ENGLISH     :OFF
    CHANGE  SETTINGS
CANADIAN   FRENCH      :OFF
    CHANGE  SETTINGS
            PREVIOUS  PAGE

SELECT : ▲ ▼            SET : SET
END      : ACTION
```

Select CANADIAN ENGLISH Language.

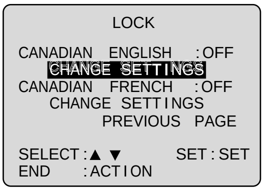


1) Press ▲▼ to select.

2) Press SET to set "ON" or "OFF."

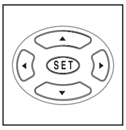
- **"ON" ➔ V-Chip Control is activated.**
- **"OFF" ➔ V-Chip Control is deactivated.**

3



```
                LOCK
CANADIAN   ENGLISH     :OFF
    CHANGE  SETTINGS
CANADIAN   FRENCH      :OFF
    CHANGE  SETTINGS
            PREVIOUS  PAGE

SELECT : ▲ ▼            SET : SET
END      : ACTION
```

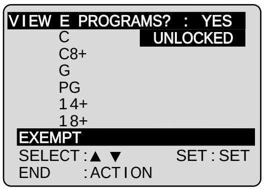
Select CHANGE SETTINGS.



1) Press ▲▼ to select.

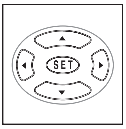
2) Press SET to display.

4



```
VIEW  E  PROGRAMS?  :  YES
        C           UNLOCKED
        C8+
        G
        PG
        14+
        18+
EXEMPT
SELECT : ▲ ▼            SET : SET
END      : ACTION
```

Select VIEW E PROGRAMS?.

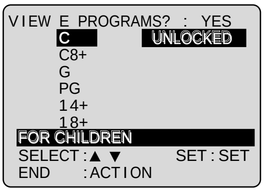


1) Press ▲▼ to select.

2) Press SET to set "YES" or "NO."

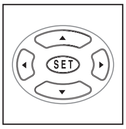
E (Exempt) PROGRAMS
Some TV shows, such as news, sports, weather, bulletins, emergency information usually have no ratings.

5



```
VIEW  E  PROGRAMS?  :  YES
        C           UNLOCKED
        C8+
        G
        PG
        14+
        18+
FOR CHILDREN
SELECT : ▲ ▼            SET : SET
END      : ACTION
```

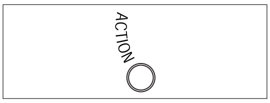
Select ratings to be blocked. (See right.)



1) Press ▲▼ to select.

2) Press SET to set "LOCKED" or "UNLOCKED."

6

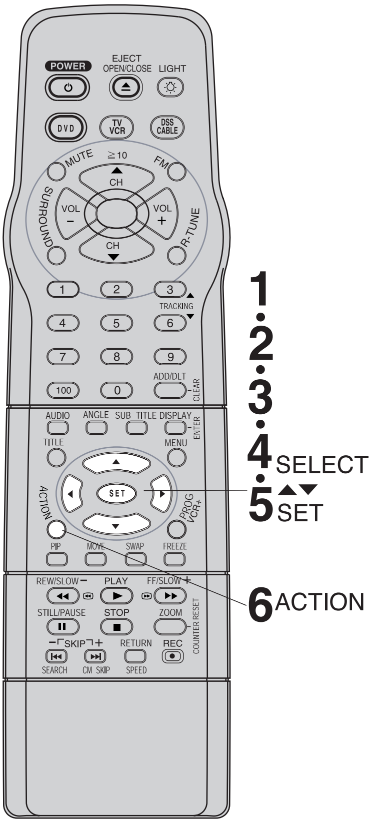


Redisplay LOCK menu to continue setup.

Press ACTION and go to page 42 (CANADIAN FRENCH Language Ratings)

OR

to exit, press ACTION four times.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL −
VOL +
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
1
2
3
4
5
SELECT ▲▼
SET
6 ACTION

CANADIAN ENGLISH Language Ratings

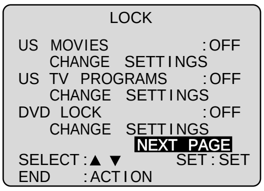
C	Children
C8+	Children 8 years and older
G	General Audience
PG	Parental Guidance
14+	Viewers 14 years and older
18+	Adult Programming

V-Chip Control Feature (continued)

Setup CANADIAN FRENCH Language Ratings

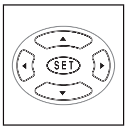
If LOCK menu is not displayed, do "Enter Secret Code" steps on page 38.

1



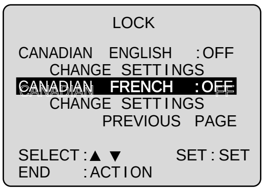
```
              LOCK
US  MOVIES                :OFF
     CHANGE  SETTINGS
US  TV  PROGRAMS          :OFF
     CHANGE  SETTINGS
DVD  LOCK                 :OFF
     CHANGE  SETTINGS
                 NEXT  PAGE
SELECT:▲ ▼         SET:SET
END    :ACTION
```

Select NEXT PAGE.



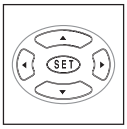
1) Press ▲▼* to select.
2) Press SET to display.

2



```
              LOCK
CANADIAN  ENGLISH     :OFF
     CHANGE  SETTINGS
CANADIAN  FRENCH      :OFF
     CHANGE  SETTINGS
             PREVIOUS  PAGE

SELECT:▲ ▼         SET:SET
END    :ACTION
```

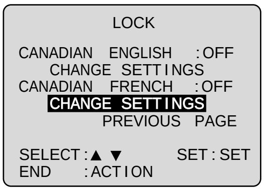
Select CANADIAN FRENCH Language.



1) Press ▲▼ to select.
2) Press SET to set "ON" or "OFF."

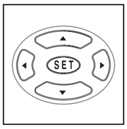
- **"ON" ➔ V-Chip Control is activated.**
- **"OFF" ➔ V-Chip Control is deactivated.**

3



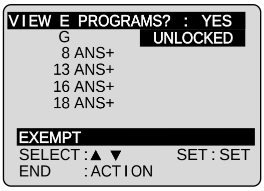
```
              LOCK
CANADIAN  ENGLISH     :OFF
     CHANGE  SETTINGS
CANADIAN  FRENCH      :OFF
     CHANGE  SETTINGS
             PREVIOUS  PAGE

SELECT:▲ ▼         SET:SET
END    :ACTION
```

Select CHANGE SETTINGS.



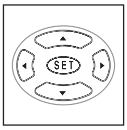
1) Press ▲▼ to select.
2) Press SET to display.

4



```
VIEW  E  PROGRAMS?  :  YES
      G            UNLOCKED
       8 ANS+
      13 ANS+
      16 ANS+
      18 ANS+

EXEMPT
SELECT:▲ ▼         SET:SET
END    :ACTION
```

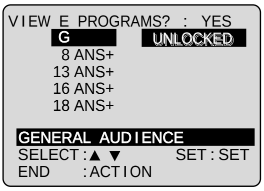
Select VIEW E PROGRAMS?.



1) Press ▲▼ to select.
2) Press SET to set "YES" or "NO."

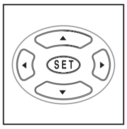
E (Exempt) PROGRAMS
Some TV shows, such as news, sports, weather, bulletins, emergency information usually have no ratings.

5



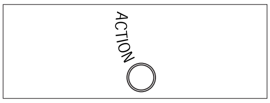
```
VIEW  E  PROGRAMS?  :  YES
      G            UNLOCKED
       8 ANS+
      13 ANS+
      16 ANS+
      18 ANS+

GENERAL  AUDIENCE
SELECT:▲ ▼         SET:SET
END    :ACTION
```

Select ratings to be blocked. (See right.)



1) Press ▲▼ to select.
2) Press SET to set "LOCKED" or "UNLOCKED."

6

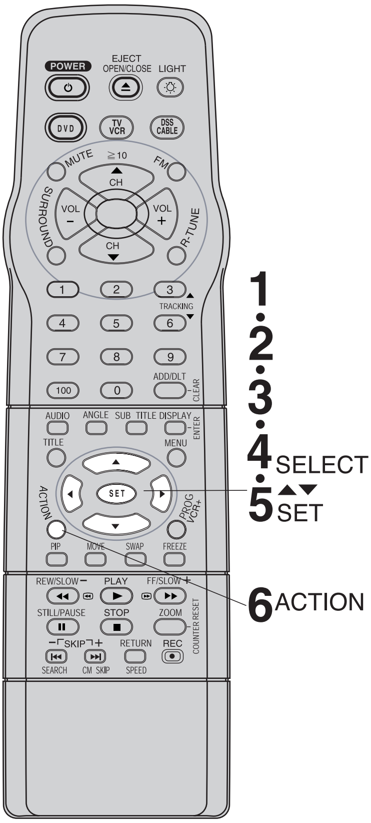


Redisplay LOCK menu to continue setup.

Press ACTION and go to page 41 (CANADIAN ENGLISH Language Ratings)
OR
to exit, press ACTION four times.

Process of V-Chip Control Feature

Enter Code ⇨ **Setup** ⇨ **Blocking**


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL –
VOL +
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB
TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW–
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
1·2·3·4 SELECT ▲▼
5 SET
6 ACTION

CANADIAN FRENCH Language Ratings

G	General
8 ANS +	Not recommended for young children
13 ANS +	Programming may not be suitable for children under the age of 13
16 ANS +	Programming is not suitable for children under the age of 16
18 ANS +	Programming restricted to adults

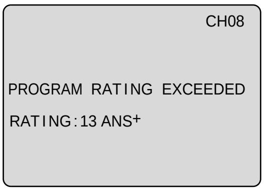
Blocking Message

Process of V-Chip Control Feature

Enter Code ⇨ **Setup** ⇨ **Blocking**

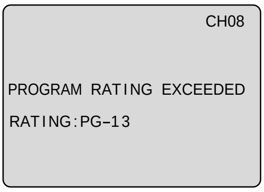
<When V-Chip Control is activated>

- **If V-Chip Control is activated, and a program or movie exceeds the ratings you have set, a message will appear on a black background and sound is muted.**



```
                        CH08

PROGRAM RATING EXCEEDED
RATING:13 ANS+
```

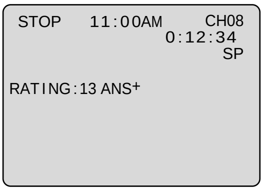
<CANADIAN Rating>



```
                        CH08

PROGRAM RATING EXCEEDED
RATING:PG-13
```

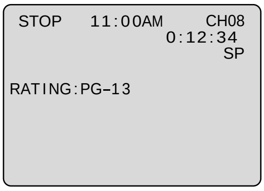
<US Rating>

- **If DISPLAY is pressed, even when V-Chip control is deactivated, rating is displayed on-screen.**



```
STOP   11:00AM      CH08
               0:12:34
                      SP
RATING:13 ANS+
```

<CANADIAN Rating>



```
STOP   11:00AM      CH08
               0:12:34
                      SP
RATING:PG-13
```

<US Rating>

To Continue Viewing a Blocked Program

After entering your 4-digit secret code, go to step **1** on both pages 39, 40, 41 and 42 and select “OFF” to deactivate V-Chip Control.

- The US MOVIES, US TV PROGRAMS, CANADIAN ENGLISH Language and CANADIAN FRENCH Language Ratings you set will be retained in memory.

Note

- PIP function cannot be used when V-Chip control is active.
- When the PIP picture is blocked due to the V-Chip feature, the PIP screen turns black while the Main Picture continues to be displayed.

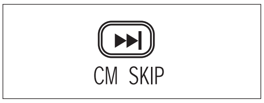
Tape Operation

Your unit is equipped with several time saving features as well as convenient automatic functions which make tape operation easier than ever.

Commercial Skip

By pressing the CM SKIP button in Play mode, you can skip over 1 to 3 minutes of recorded tape in just a few seconds.

1



Set Skip Time.

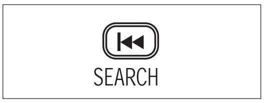
Press CM SKIP* repeatedly to select skip time as follows.

OFF → 1st Press 1 min Skip → 2nd Press 2 min Skip → 3rd Press 3 min Skip

Program End Search

Each time a recording is made, an invisible index mark is placed on the tape. This allows you to easily search for the end of your recordings to continue or start a new recording.

a

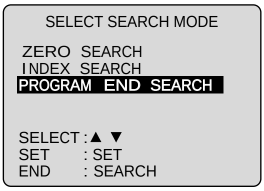


Display SELECT SEARCH MODE in Playback or Stop mode.

Press SEARCH on the remote.

---

b

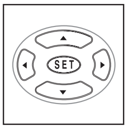


SELECT SEARCH MODE

ZERO SEARCH
INDEX SEARCH
PROGRAM END SEARCH

SELECT : ▲ ▼
SET : SET
END : SEARCH

Display PROGRAM END SEARCH.



1) Press ▲▼ to select.

2) Press SET to start search.

Example of **Program End Search** operation.

Fig.1

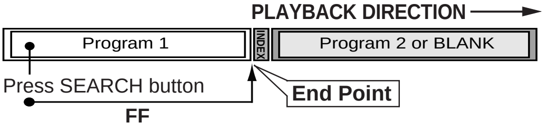

PLAYBACK DIRECTION
Program 1
INDEX
Program 2 or BLANK
Press SEARCH button
End Point
FF

Fig.2

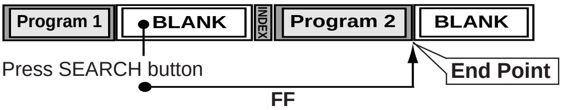
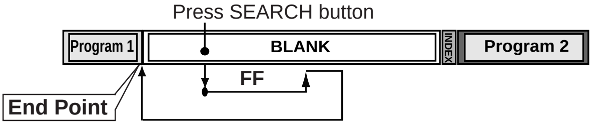
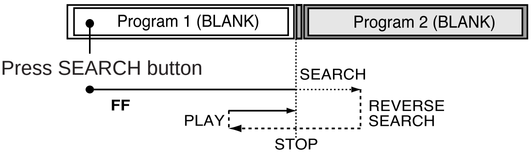

Program 1
BLANK
INDEX
Program 2
BLANK
Press SEARCH button
End Point
FF

Fig.3 If search exceeds a few seconds in BLANK area.


Press SEARCH button
Program 1
BLANK
INDEX
Program 2
FF
End Point

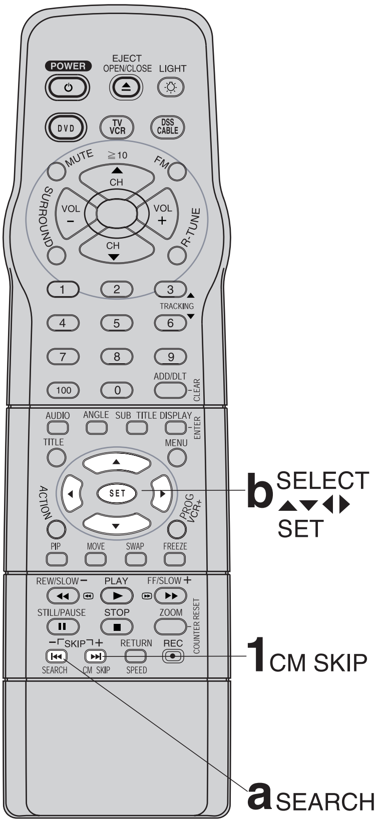
If Program End Point is found.

The search continues slightly beyond the end point, then search and reverse search and plays the last few seconds of the program and finally stop.


Program 1 (BLANK)
Program 2 (BLANK)
Press SEARCH button
SEARCH
FF
PLAY
REVERSE SEARCH
STOP

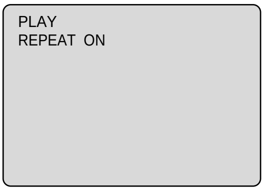
Notes

- If Program End Search is started very close to an index mark, one program may be skipped over.
- If you want to cancel Program End Search, Press PLAY or STOP.

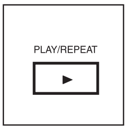

POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
COUNTER RESET
SEARCH
CM SKIP
SPEED
b SELECT ▲▼◀▶ SET
1 CM SKIP
a SEARCH

Repeat Play

Set to see a recording over and over.



PLAY
REPEAT ON


PLAY/REPEAT

To turn "ON,"

press PLAY/REPEAT on the unit repeatedly in Play mode to select "REPEAT ON".

To turn "OFF,"

repeat above to select "REPEAT OFF."

- Playback repeats when tape end is reached or unrecorded portion over 30 seconds is detected.

Note

- For repeat play in DVD mode, see page 59.

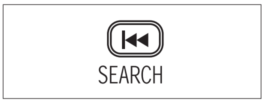
VHS Index Search System is ...

Each time recording is made, an invisible index mark is placed on the tape. When timer recordings are made, program index and information are also included. These index marks can be used to access or scan recordings.

Direct Access (For Normal and/or Timer recordings)

Go directly to the desired recording.

1

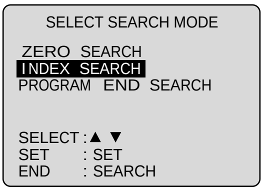


Display SELECT SEARCH MODE screen.

Press SEARCH in Playback or Stop mode.

- If there are no Timer Recordings on the Program Index List, go to step **3**.

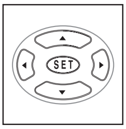
2


SELECT SEARCH MODE

ZERO SEARCH
INDEX SEARCH
PROGRAM END SEARCH

SELECT : ▲ ▼
SET : SET
END : SEARCH

Display INDEX screen.

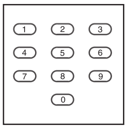


1) Press ▲▼ to select “INDEX SEARCH.”
2) Press SET to display.

3

INDEX

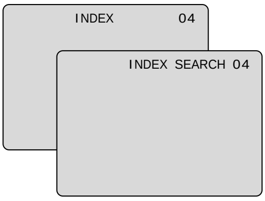
Select the recording number.


1
2
3
4
5
6
7
8
9
0

Press NUMBERED keys.

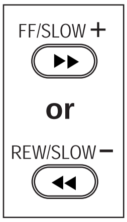
- To calculate number, see below.

4


INDEX 04

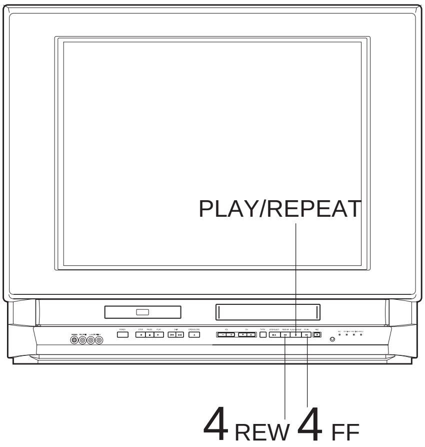
INDEX SEARCH 04

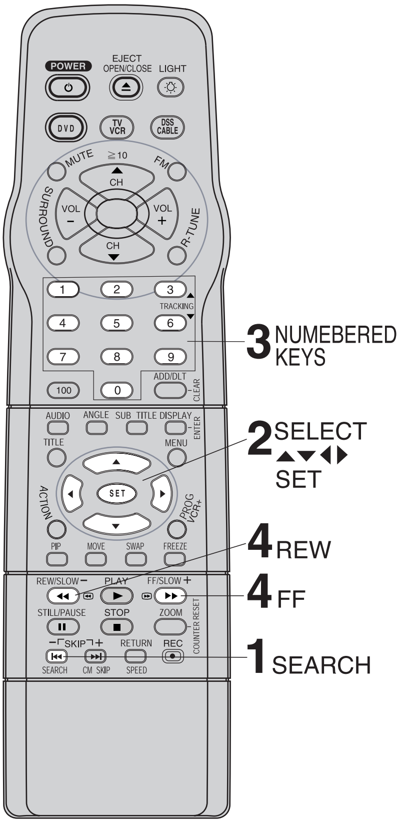
Start search.


FF/SLOW +
or
REW/SLOW −

Press FF or REW.

- When search is finished, playback begins.

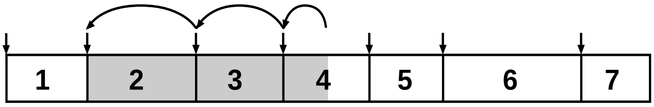

PLAY/REPEAT
4 REW
4 FF


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB
TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
3 NUMEBERED KEYS
2 SELECT ▲▼◀▶ SET
4 REW
4 FF
1 SEARCH

To calculate the Index Number

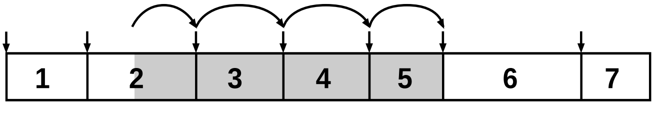
Example 1:

If you are watching recording 4 and you want to watch recording 2, enter “**3**” in step 3 and press REW.



Example 2:

If you are watching recording 2 and you want to watch recording 6, enter “4” in step 3 and press FF.



NOTE: ↓ indicates start points of each recording.

Notes

- Make each entry within 10 seconds, or the Index Search mode will be cancelled.
- If Direct Access or Index Scan search is started very close to an index mark, that index mark may not be counted in the search.

Tape Operation (continued)

Index Scan (For Normal and/or Timer recordings)

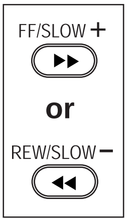
In Play mode, the first 10 seconds of each recording can be scanned (forward or reverse.)

A Repeat step 1 and 2 on page 45 to display the INDEX screen.

B

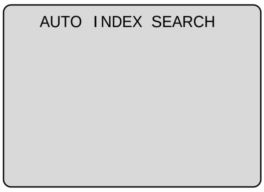
INDEX

Start the scan.


FF/SLOW +
or
REW/SLOW −

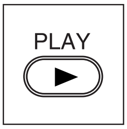
Press FF or REW.

C



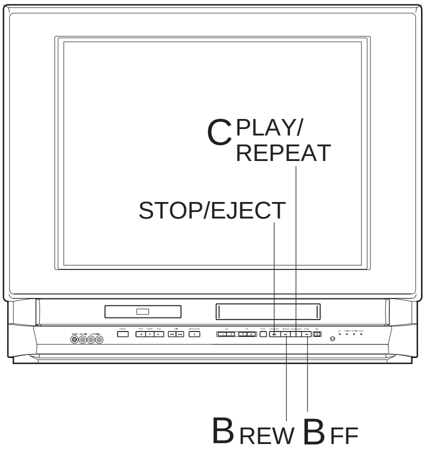
AUTO INDEX SEARCH

Cancel scan, start playback.

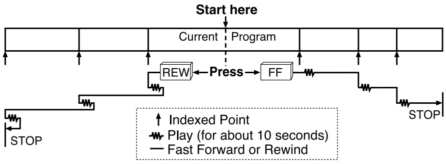


Press PLAY.

- To stop, press STOP. (See example right.)


C PLAY/ REPEAT
STOP/EJECT
B REW B FF

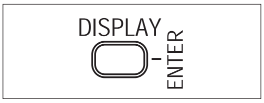
<Example>


Start here
Current
Program
REW
Press
FF
STOP
STOP
Indexed Point
Play (for about 10 seconds)
Fast Forward or Rewind

Zero Search

To quickly return to a specific tape counter location.

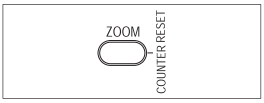
a


DISPLAY
ENTER

Display the Counter.

Press DISPLAY* during playback.

b


ZOOM
COUNTER RESET

Reset to “0:00:00.”

Press COUNTER RESET at the desired position.

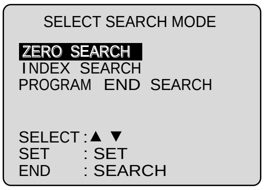
c **Continue playback, rewind, or fast forward.**

d

Display SELECT SEARCH MODE in Stop mode.

Press SEARCH.

e

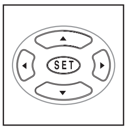


SELECT SEARCH MODE

ZERO SEARCH
INDEX SEARCH
PROGRAM END SEARCH

SELECT : ▲ ▼
SET : SET
END : SEARCH

Select ZERO SEARCH.



1) Press ▲▼ to select.
2) Press SET to start search.

Return to “0:00:00.”

- Unit will goes into FF or REW mode and stops at the last point the Counter was set to 0:00:00.

Auto Operation Functions

■ **Auto Shut Off**

If no broadcast signal in TV, DVD stop, or Playback mode for 5 min.,
➔ Power turns off automatically

- This feature is deactivated if any button is pressed during the above mode.

■ **Auto Playback**

A tape is inserted in Power off mode,
➔ Power turns on automatically
➔ Playback starts if no rec. tab

■ **Auto Rewind**

A tape reaches its end,
➔ Rewind begins
➔ Tape stops

■ **Playback Auto Eject (Repeat Play is “OFF”)**

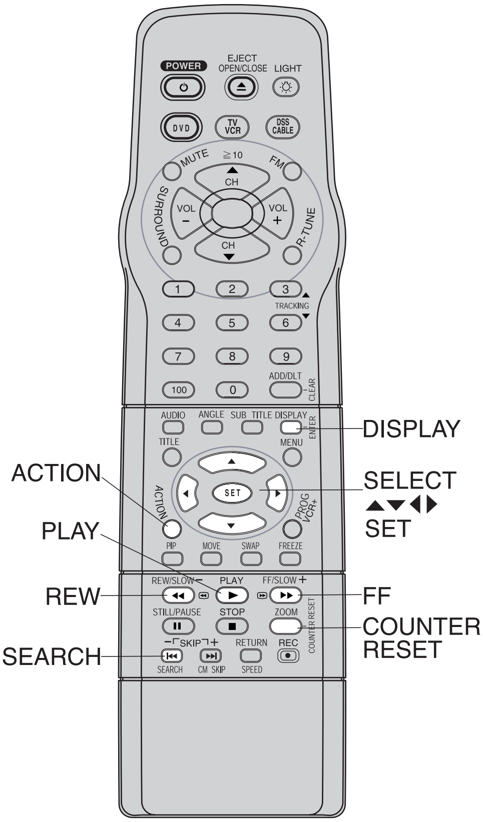
A tape with no rec. tab reaches its end,
➔ Rewind begins
➔ Tape ejects

■ **Memory Rewind off**

POWER is pressed in REW mode,
➔ TV Power shuts off (rewind continues)
➔ Rewind completes
➔ All power shuts off

Check list before you begin.

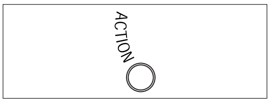
☐ It is necessary to enter TV mode by pressing TV/VCR before selecting "CH" on the MAIN MENU.



Weak Signal Display ON/OFF

When "ON" is selected, the picture is displayed even when a broadcast signal is weak or non-existent.

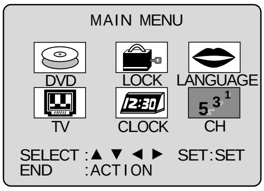
1



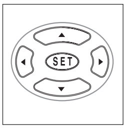
Display MAIN MENU.

Press ACTION.

2



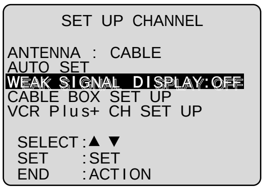
Display SET UP CHANNEL screen.



1) Press ▲▼◀▶ to select "CH."

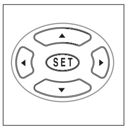
2) Press SET to display.

3



```
SET UP CHANNEL

ANTENNA  :  CABLE
AUTO SET
WEAK SIGNAL DISPLAY:OFF
CABLE BOX SET UP
VCR Plus+ CH SET UP

SELECT : ▲ ▼
SET    : SET
END    : ACTION
```

Select WEAK SIGNAL DISPLAY.



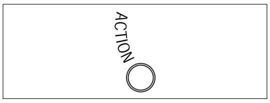
1) Press ▲▼ to select.

2) Press SET to set "ON" or "OFF."

Notes

- "ON" = Picture is displayed regardless of signal condition, and may not always be clearly visible.
  "OFF" = Screen turns solid blue when signal is absent or weak.
- If unit is connected to equipment which has blue back feature, selecting "ON" will have no effect on the other equipment.

4

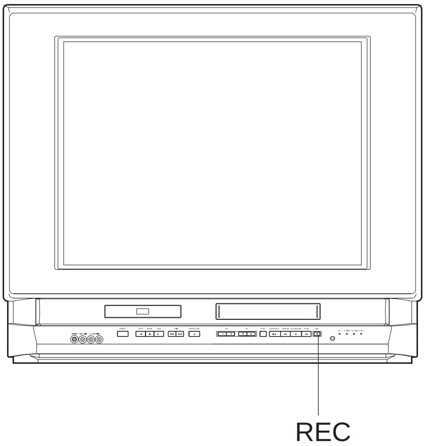


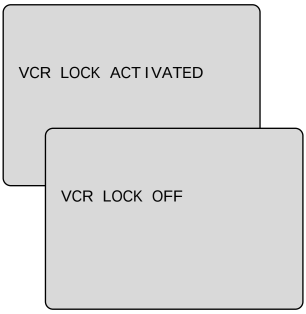
Return to the normal screen.

Press ACTION twice.

VCR Lock

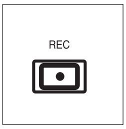
All operations are prohibited except Timer recording and tape eject. Useful for families with small children.





VCR LOCK ACTIVATED

VCR LOCK OFF



To turn "ON."
In stop mode, hold down REC on the unit without a cassette inserted for 7 seconds.

To turn "OFF."
Repeat above with or without cassette.

- VCR Lock is cancelled automatically after about 24 hours if clock is set.

Audio Features

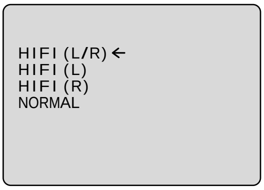
Select Audio Mode for Playback

Choose the type of sound track for playback.

1 **Playback the tape.**

See the “Playback a Tape” section on page 17.

2



HIFI (L/R)←
HIFI (L)
HIFI (R)
NORMAL

- This screen appears when you press AUDIO during playback.

Select desired mode.

Press AUDIO* repeatedly (each press within 5 seconds.)

- Please select “HIFI (L/R)”, “HIFI (L)” or “HIFI (R)” to listen to stereo recordings in stereo sound. Select “NORMAL” for monaural sound.

Select Audio Mode for Recording

Choose the type of broadcast to be recorded.

a

Select Audio Mode for recording.

Press AUDIO.

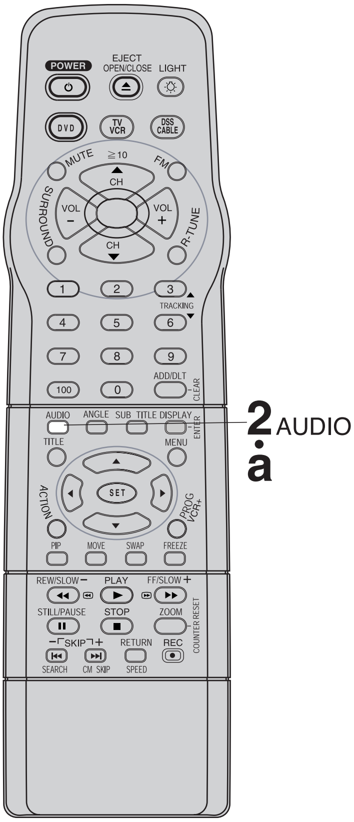
Recording is always made in the audio mode selected in the “Select Audio Mode for TV Viewing” section on page 16.

b **Do a recording.**

See the “Record On a Tape” section on page 18.

With the proper audio mode setting, your unit can:

- record and playback MTS stereo broadcast (main language) in stereo Hi-Fi. Stereo sound is recorded on the left and right audio tracks and on the video portion of a tape.
- record and playback a monaural broadcast (main language) or SAP (Secondary Audio Program, usually in a second language) on the Hi-Fi tracks for better quality monaural sound.
- playback non-Hi-Fi tapes in monaural.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
1
2
3
4
5
6
7
8
9
100
0
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
COUNTER RESET
2
a
AUDIO

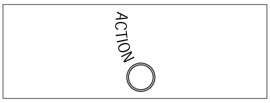
Notes

- When purchasing or renting pre-recorded tapes, remember that only those recorded in Hi-Fi stereo will playback with true stereo sound. Standard stereo tapes will playback with monaural sound.
- To listen to the superior sound of Hi-Fi stereo playback, the unit AUDIO (L/R) jacks must be connected to a stereo amp and speakers.
- There may be a difference in audio level between Hi-Fi and normal audio playback.

Speaker ON/OFF System

You can turn off the unit speaker when it is connected to external audio equipment.

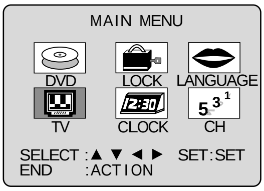
1



Display MAIN MENU.

Press ACTION.

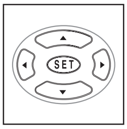
2


MAIN MENU

DVD
LOCK
LANGUAGE
TV
CLOCK
CH

SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

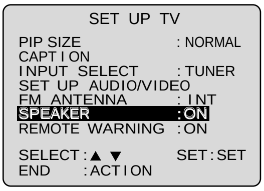
Display SET UP TV screen.



1) Press ▲▼◀ ▶ to select “TV.”

2) Press SET to display.

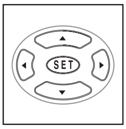
3


SET UP TV

PIP SIZE : NORMAL
CAPTION
INPUT SELECT : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA : INT
SPEAKER : ON
REMOTE WARNING : ON

SELECT : ▲ ▼ SET : SET
END : ACTION

Select SPEAKER.

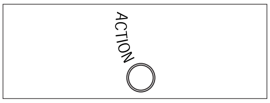


1) Press ▲▼ to select.

2) Press SET to set “ON” or “OFF.”

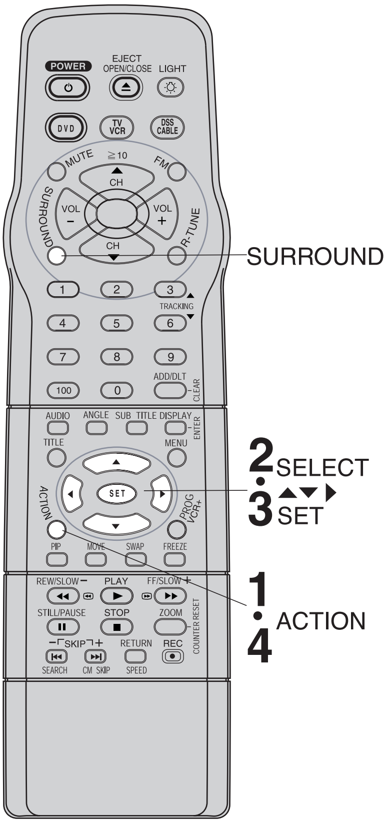
- In SPEAKER OFF condition, the MUTE button and VOL + – do not function.

4



End setup.

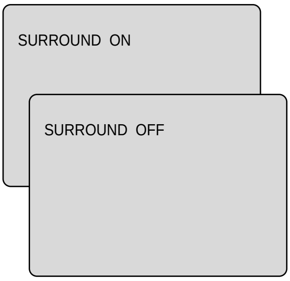
Press ACTION twice.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
CH
VOL
VOL
SURROUND
R-TUNE
SURROUND
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW–
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
2 SELECT
3 SET
1
4 ACTION

Surround Sound system

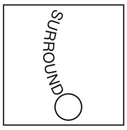
You can hear a deeper, 3-D sound effect using just the unit’s two front speakers.

Set Surround sound.


SURROUND ON

SURROUND OFF

Press SURROUND.
•“SURROUND ON” will be displayed.



To Cancel, press SURROUND.

Notes

- Surround sound effect is not available for normal (mono) broadcasts.
- The surround effect (TV, VCR mode only) is not transmitted to the Audio Output L/R Connector.

Audio / Video Menu

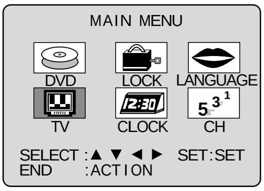
*Important: if a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

This feature allows easy setting of picture and sound suitable for each program source.

Audio Menu

1 **Display MAIN MENU.**
Press ACTION*.

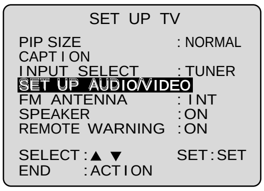
2


MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT :▲ ▼ ◄ ► SET:SET
END :ACTION

Display SET UP TV screen.

1) Press ▲▼◄► to select “TV.”
2) Press SET to display.

3

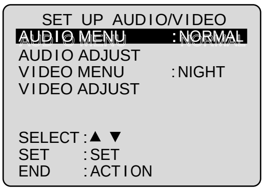


```
SET UP TV
PIP SIZE               : NORMAL
CAPTION
INPUT SELECT           : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA             : INT
SPEAKER                : ON
REMOTE WARNING         : ON

SELECT : ▲ ▼           SET : SET
END    : ACTION
```

Display SET UP AUDIO/VIDEO screen.

1) Press ▲▼ to select.
2) Press SET to display.

4



```
SET UP AUDIO/VIDEO
AUDIO MENU         : NORMAL
AUDIO ADJUST
VIDEO MENU         : NIGHT
VIDEO ADJUST

SELECT : ▲ ▼
SET    : SET
END    : ACTION
```

Select AUDIO MENU.

1) Press ▲▼ to select.
2) Press SET to set AUDIO MENU. (See below.)

5 **End setup.**
Press ACTION three times to exit.

[Audio Menu]

■ **NORMAL**
Factory setting

■ **AUTO**
[Audio AGC (Auto Gain Control)**]**
The sound level is automatically adjusted to suit the program source (see right.)

■ **MOVIE**
Sound suited to movies.

■ **MUSIC**
Sound suited to music.

■ **SPEECH**
Sound suited to dialogue.

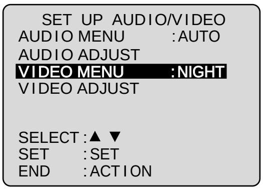
Notes

- The effects of this feature on the signal is not output to the Audio/Video Output Connector.
- When AUDIO MENU mode is “AUTO,” the AUDIO ADJUST setting will be “STANDARD.”
- AUDIO MENU settings remain in memory.
- VIDEO MENU settings do not remain in memory.

Video Menu

a **Do steps 1 - 3 left.**

b



```
SET UP AUDIO/VIDEO
AUDIO MENU       : AUTO
AUDIO ADJUST
VIDEO MENU       : NIGHT
VIDEO ADJUST

SELECT : ▲ ▼
SET    : SET
END    : ACTION
```

Select VIDEO MENU.

1) Press ▲▼ to select.
2) Press SET to set VIDEO MENU. (See blow.)

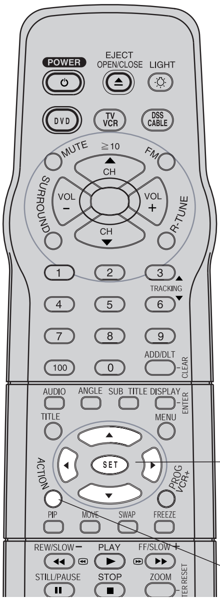
c **End setup.**
Press ACTION three times to exit.

[Video Menu]

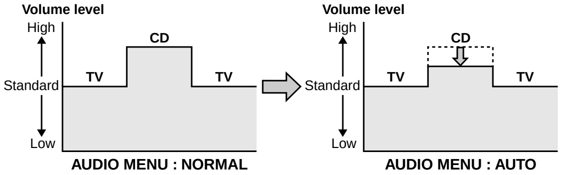
■ **NORMAL**
Factory setting.

■ **MOVIE**
Picture is adjusted for a Movie-like feel.

■ **NIGHT**
Colour and picture intensity is adjusted to be easier on the eyes for night viewing.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM

SELECT ▲▼◄►
SET
ACTION



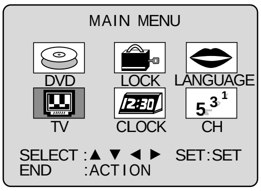
<Audio AGC Example>

Audio / Video Adjustment

Video Adjustment

1 **Display MAIN MENU.**
Press ACTION.

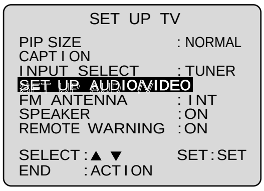
2



Display SET UP TV screen.

1) Press ▲▼◀ ▶ to select "TV."
2) Press SET to display.

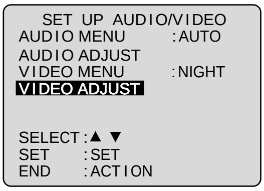
3


SET UP TV
PIP SIZE : NORMAL
CAPTION
INPUT SELECT : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA : INT
SPEAKER : ON
REMOTE WARNING : ON
SELECT : ▲ ▼ SET : SET
END : ACTION

Display SET UP AUDIO/VIDEO screen.

1) Press ▲▼ to select.
2) Press SET to display.

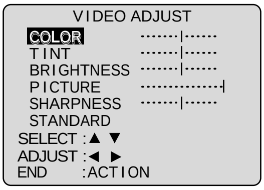
4


SET UP AUDIO/VIDEO
AUDIO MENU : AUTO
AUDIO ADJUST
VIDEO MENU : NIGHT
VIDEO ADJUST
SELECT : ▲ ▼
SET : SET
END : ACTION

Select VIDEO ADJUST screen.

1) Press ▲▼ to select.
2) Press SET to display.

5


VIDEO ADJUST
COLOR
TINT
BRIGHTNESS
PICTURE
SHARPNESS
STANDARD
SELECT : ▲ ▼
ADJUST : ◀ ▶
END : ACTION

Adjust desired item.

1) Press ▲▼ to select an item. (See below right.)
2) Press ◀ ▶ to adjust.

To Reset VIDEO Controls.
Press ▲▼ and SET to select and set "STANDARD." All controls return to their factory settings.

6 **End setup.**
Press ACTION four times to exit.

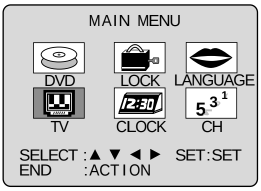
[VIDEO Adjustment]

- **COLOUR Control**
  Adjust colour intensity.
- **TINT Control**
  Adjust for natural flesh tones.
- **BRIGHTNESS Control**
  Adjust picture brightness.
- **PICTURE Control**
  Adjust picture intensity by adjusting both contrast and colour level in the proper balance.
- **SHARPNESS Control**
  Adjust picture sharpness.

Audio Adjustment

a **Display MAIN MENU.**
Press ACTION.

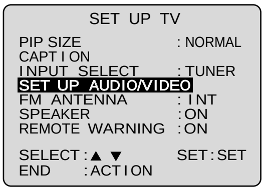
b



Display SET UP TV screen.

1) Press ▲▼◀ ▶ to select "TV."
2) Press SET to display.

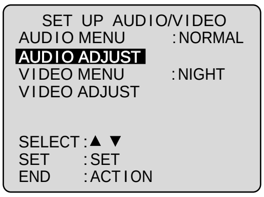
c


SET UP TV
PIP SIZE : NORMAL
CAPTION
INPUT SELECT : TUNER
SET UP AUDIO/VIDEO
FM ANTENNA : INT
SPEAKER : ON
REMOTE WARNING : ON
SELECT : ▲ ▼ SET : SET
END : ACTION

Display SET UP AUDIO/VIDEO screen.

1) Press ▲▼ to select.
2) Press SET to display.

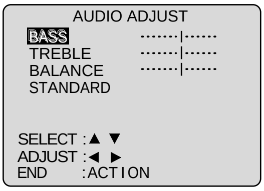
d


SET UP AUDIO/VIDEO
AUDIO MENU : NORMAL
AUDIO ADJUST
VIDEO MENU : NIGHT
VIDEO ADJUST
SELECT : ▲ ▼
SET : SET
END : ACTION

Select AUDIO ADJUST screen.

1) Press ▲▼ to select.
2) Press SET to display.

e


AUDIO ADJUST
BASS
TREBLE
BALANCE
STANDARD
SELECT : ▲ ▼
ADJUST : ◀ ▶
END : ACTION

Adjust desired item.

1) Press ▲▼ to select an item. (See below right.)
2) Press ◀ ▶ to adjust.

To Reset AUDIO Controls.
Press ▲▼ and SET to select and set "STANDARD." All controls return to their factory settings.

f **End setup.**
Press ACTION three times to exit.

Note

- When AUDIO MENU mode is "AUTO," the AUDIO ADJUST setting will be "STANDARD."

[AUDIO Adjustment]

- **BASS Control**
  To adjust the intensity of low frequency sound.
- **TREBLE Control**
  To adjust the intensity of high frequency sound.
- **BALANCE Control**
  To adjust the (L/R) unit speaker output level.

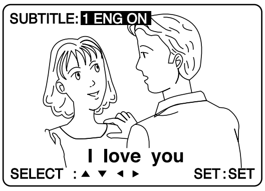
- The levels set here do not affect other audio equipment when connected to the Audio Output L/R Connector.

Disc Operation

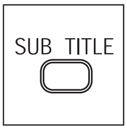
Changing subtitle language (DVD only)

You can select a different subtitle language (if offered) than the one set at the Settings for DVD Operation. (See page 61.)

1



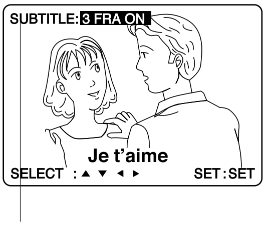
Display the subtitle screen.



Press SUB TITLE* in play mode.

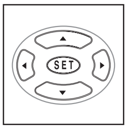
- When no subtitles are offered, "-" will be displayed instead of the language number.

2



Number of subtitle language being played back.

Set the desired language.



1) Press ▲▼ to select language.
2) Press ► (or ◄) to set.
3) Press ▲ (or ▼) to select "ON" or "OFF."

To return to the normal screen, Press SUB TITLE.

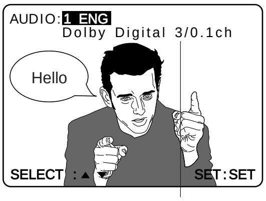
Notes

- **When closed captioning is used along with subtitles, they may overlap. If so, turn one function off. (See pages 32 and 33.)**
- **If, after several presses of the button the language does not change, language selection is not offered on the disc.**
- Subtitles may not change to the selected language immediately.
- When power is turned on or disc is removed, subtitles revert to initial setting language. If the initial language is not recorded on the disc, the disc's priority language will appear.

Changing audio soundtrack language (DVD only)

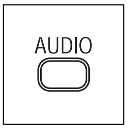
You can change the audio soundtrack language, selected at the Settings for DVD Operation, to a different language if available. (See page 61.)
(This operation works only with discs on which multiple audio soundtrack languages are recorded.)

a



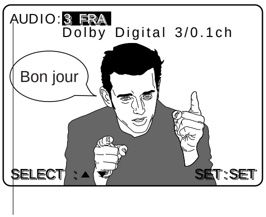
Audio attribute 1 type, sampling frequency, bit No. of the disc.

Display the audio screen.



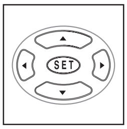
Press AUDIO in play mode.

b



Number of the audio soundtrack language being played back.

Select the desired language.



Press ▲▼ to select desired language.

To return to the normal screen. Press AUDIO.

Check list before you begin.

☐ Please read "Basic DVD Operation" on page 20.

[Subtitle language (No.)]
[Audio sound track language (No.)]

ENG	English
FRA	French
DEU	German
ITA	Italian
ESP	Spanish
NLD	Dutch
SVE	Swedish
NOR	Norwegian
DAN	Danish
POR	Portuguese
RUS	Russian
JPN	Japanese
CHI	Chinese
KOR	Korean
MAL	Malay
VIE	Vietnamese
THA	Thai
✻	Other

- Change the No. by pressing ▲▼, and press SET.

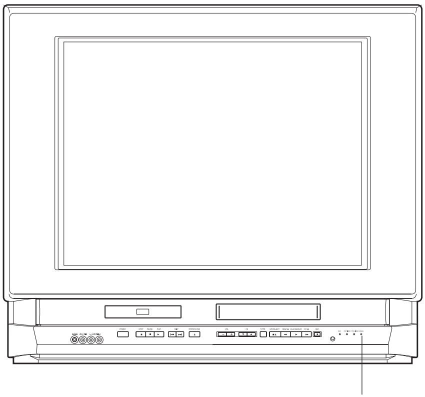
[Audio attribute 1 type, sampling frequency, bit No. of the disc (see page 62)**]**

LPCM	**96KHz or 48KHz**	**16bit**	**Linear PCM disc**
		20bit	
		24bit	
AC-3	**1ch - 5.1ch**		**Dolby Digital (AC-3) disc**
DTS	**1ch - 5.1ch**		**DTS disc**

Notes

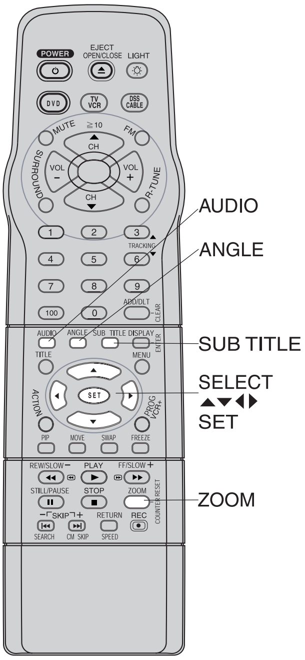
- If, after several presses of the button the language does not change, language selection is not offered on the disc.
- When power is turned on or disc is removed, language reverts to initial setting. If this language is not recorded on the disc, the language recorded will be heard.

When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.


ANGLE indicator

Notes

- ANGLE lights on the unit when a scene recorded at different angles is detected.
- The angle number can be set beforehand so that the angle is switched whenever ANGLE lights.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
AUDIO
ANGLE
SUB TITLE
SELECT
▲▼◀▶
SET
ZOOM

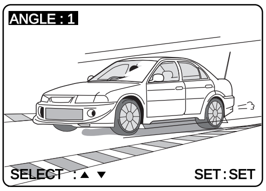
Notes

- Closed captioning will not be displayed while Picture Zoom is used.
  To see subtitles, set the subtitle feature to ON (see page 52.)
- The subtitle position cannot be changed. The subtitle cannot be enlarged.
- The Zoom feature may not work with the menu screen.
- The picture zoom feature does not work with a Video CD.
- During picture zoom, “ZOOM1” or “ZOOM2” is displayed on the screen.

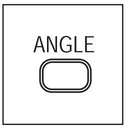
Multiple angle viewing (DVD only)

DVDs may contain scenes shot from multiple camera angles allowing the same scene to be viewed at different angles.
For these discs, the same scene can be viewed from each of these angles, if available, can be viewed using the ANGLE button.

1

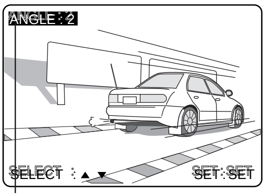

ANGLE : 1
SELECT : ▲ ▼
SET : SET

Display the angle screen.



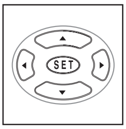
Press ANGLE in play mode.

2


ANGLE : 2
SELECT : ▲ ▼
SET : SET

Number of angle being played back.

Select the desired angle.



Press ▲▼ to select.

To return to the normal screen, Press ANGLE.

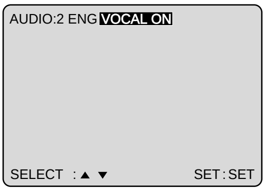
Vocal selection for Karaoke discs (DVD/Video CD)

a

Display the audio screen.

Press AUDIO in play mode.

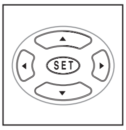
b



AUDIO:2 ENG VOCAL ON

SELECT : ▲ ▼ SET : SET

Select the desired setting.

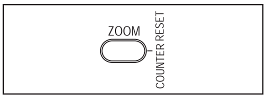


1) Press ▲▼ (or ◀▶) to select.
2) Press ▶ (or ◀) to set. (DVD only)

- DVD Karaoke (1 vocal) VOCAL ON↔VOCAL OFF
- DVD Karaoke (2 vocals) VOCAL V1 + V2→VOCAL V1→VOCAL V2→VOCAL OFF
- Video CD LR→L→R

Picture Zoom (DVD only)

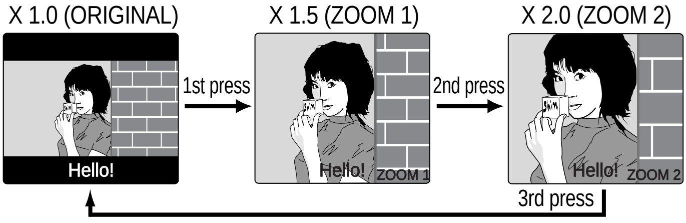
You can enlarge specific portions of a picture and select the zoom ratio using the ZOOM button on the remote during DVD playback.


ZOOM
COUNTER RESET

Set Zoom size.

Press ZOOM repeatedly to change display as follows.

- You can enlarge the centre portion of the image to one of 2 magnifications.


X 1.0 (ORIGINAL)
X 1.5 (ZOOM 1)
X 2.0 (ZOOM 2)
Hello!
1st press
Hello! ZOOM 1
2nd press
Hello! ZOOM 2
3rd press

■ Use the ▲ and ▼ buttons to move the position up and down.
■ Use the ◀ and ▶ buttons to move the position left and right.

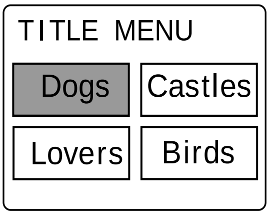
- Depending on the disc, operating the zoom may result in poor picture quality. In this case, turn zoom off.

Disc Operation (continued)

Using a title menu (DVD only)

Some DVDs have more than one title, e.g. movies.
If the disc offers a title menu, you can select the desired title number.
(Operation may vary according to the disc.)

1


TITLE MENU
Dogs
Castles
Lovers
Birds

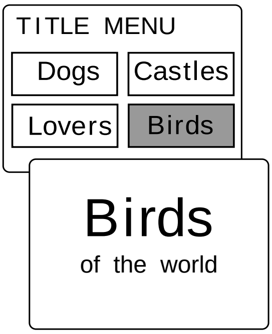
<Example>

Display the title screen.

Press TITLE* in play mode.

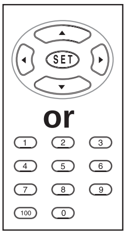
- Pressing TITLE again resumes play from the scene when TITLE was first pressed.

2


TITLE MENU
Dogs
Castles
Lovers
Birds
Birds
of the world

<Example>

Select the desired title.


SET
or
1
2
3
4
5
6
7
8
9
100
0

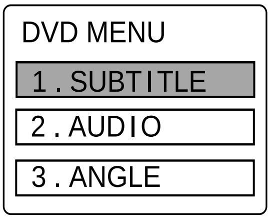
1) Press ▲▼◀▶ or NUMBERED Key(s) to select.
2) Press SET or PLAY to start playing.

- Step 2) not necessary when using NUMBERED key(s).

Using a DVD menu (DVD only)

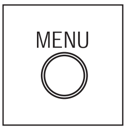
DVDs may offer a special menu. This menu may include guides to unique contents, audio/subtitle languages, etc.
Although contents and operation may vary, the following steps show basic steps for using the menu.

a


DVD MENU
1 . SUBTITLE
2 . AUDIO
3 . ANGLE

<Example>

Display the DVD menu.

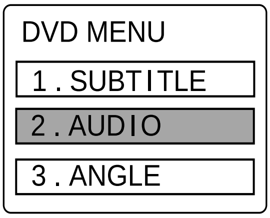


Press MENU in play mode.

- Pressing MENU again resumes play from the scene when MENU was first pressed.

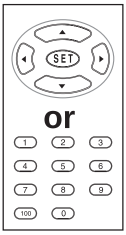
---

b


DVD MENU
1 . SUBTITLE
2 . AUDIO
3 . ANGLE

<Example>

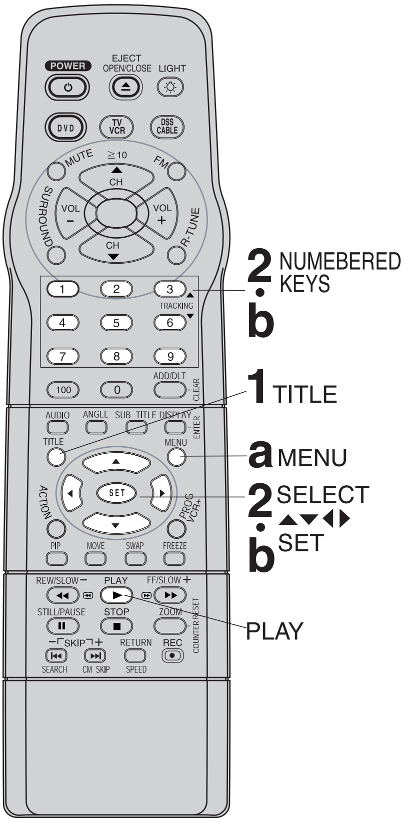
Select the desired item.


SET
or
1
2
3
4
5
6
7
8
9
100
0

1) Press ▲▼◀▶ or NUMBERED Key(s) to select.
2) Press SET or PLAY to perform.

- Step 2) not necessary when using NUMBERED key(s).

If menu continues onto another screen, repeat step b.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL −
VOL +
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
2·b NUMEBERED KEYS
1 TITLE
a MENU
2·b SELECT ▲▼◀▶ SET
PLAY

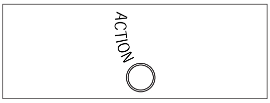
Note

- TITLE MENU cannot be operated if displayed on the PIP. Press SWAP to switch it to Main Picture, then operate.

Program Play (Video CD/CD)

You can program specific tracks and order of play.

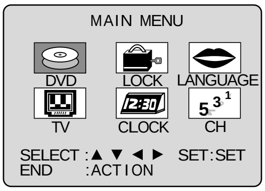
1



Display MAIN MENU.

Press ACTION in stop mode.

2



MAIN MENU

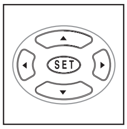
DVD LOCK LANGUAGE

TV CLOCK CH

SELECT :▲ ▼ ◀ ▶ SET:SET

END :ACTION

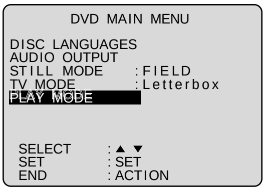
Display DVD screen.



1) Press ▲▼◀▶ to select "DVD."

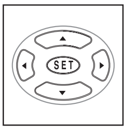
2) Press SET to display.

3



```
DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
STILL MODE      :FIELD
TV MODE         :Letterbox
PLAY MODE

SELECT      : ▲ ▼
SET         : SET
END         : ACTION
```

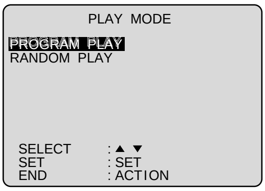
Select PLAY MODE.



1) Press ▲▼ to select.

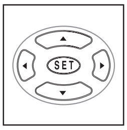
2) Press SET to display.

4



```
PLAY MODE
PROGRAM PLAY
RANDOM PLAY

SELECT      : ▲ ▼
SET         : SET
END         : ACTION
```

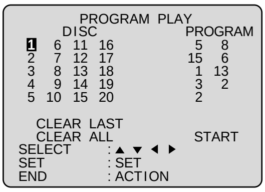
Select PROGRAM PLAY.



1) Press ▲▼ to select.

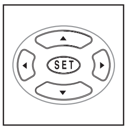
2) Press SET to display.

5



```
PROGRAM PLAY
DISC                PROGRAM
1   6  11  16        5   8
2   7  12  17       15   6
3   8  13  18        1  13
4   9  14  19        3   2
5  10  15  20        2

CLEAR LAST
CLEAR ALL           START
SELECT      : ▲ ▼ ◀ ▶
SET         : SET
END         : ACTION
```

Select desired track number. (Track numbers on disc are displayed.)

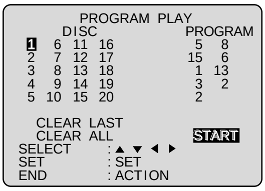


1) Press ▲▼◀▶ to select.

2) Press SET to set.

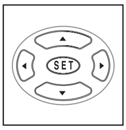
- Repeat step 5 to select another track.
- The selected track is added on the right side.

6



```
PROGRAM PLAY
DISC                PROGRAM
1   6  11  16        5   8
2   7  12  17       15   6
3   8  13  18        1  13
4   9  14  19        3   2
5  10  15  20        2

CLEAR LAST
CLEAR ALL           START
SELECT      : ▲ ▼ ◀ ▶
SET         : SET
END         : ACTION
```

Start PROGRAM PLAY.



1) Press ▲▼◀▶ to select "START."

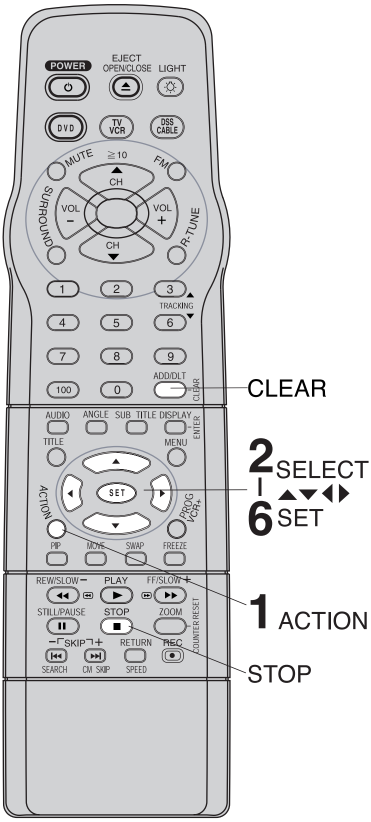
2) Press SET.

- Play begins in the programmed sequence.
- To cancel, press STOP during play and then press CLEAR.

☑ Check list before you begin.

☐ It is necessary, press TV/VCR to enter TV mode.

☐ Video CD or CD is inserted.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
SURROUND
CH
VOL −
VOL +
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
CLEAR
2 SELECT ▲▼◀▶
6 SET
1 ACTION
STOP

Notes

- Up to 15 tracks can be programmed.
- "◀" or "▶" (depending on disc) indicates additional PROGRAM PLAY screen. Press ▲▼◀▶ for next or previous screen.

- **To clear the last program one by one**
  Press ▲▼◀▶ to move to "CLEAR LAST" and press "SET."
  (Pressing CLEAR on remote control also clears last program.)
- **To clear all programs**
  Press ▲▼◀▶ to move to "CLEAR ALL" and press "SET."
  (Programs are also cleared when the power is turned off or the disc is removed.)

PROGRAM REPEAT PLAY

Press PLAY/REPEAT in PROGRAM PLAY mode and ▲▼ to select "PROGRAM REPEAT." To cancel, repeat this to select "REPEAT OFF."

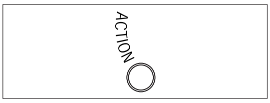
Disc Operation (continued)

*Important: if a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

Random Play (Video CD/CD)

Tracks are played in a random order.

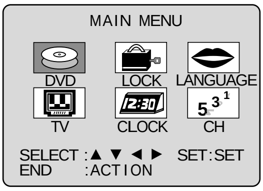
1



Display MAIN MENU.

Press ACTION in stop mode.

2



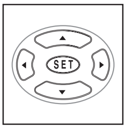
MAIN MENU

DVD LOCK LANGUAGE

TV CLOCK CH

SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

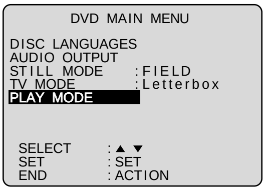
Display DVD screen.



1) Press ▲▼◀ ▶ to select “DVD.”

2) Press SET to display.

3

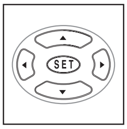


DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : FIELD
TV MODE : Letterbox
PLAY MODE

SELECT : ▲ ▼
SET : SET
END : ACTION

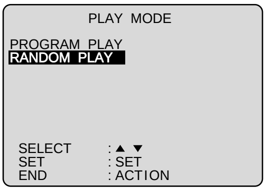
Select PLAY MODE.



1) Press ▲▼ to select.

2) Press SET to display.

4

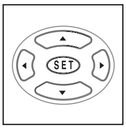


PLAY MODE

PROGRAM PLAY
RANDOM PLAY

SELECT : ▲ ▼
SET : SET
END : ACTION

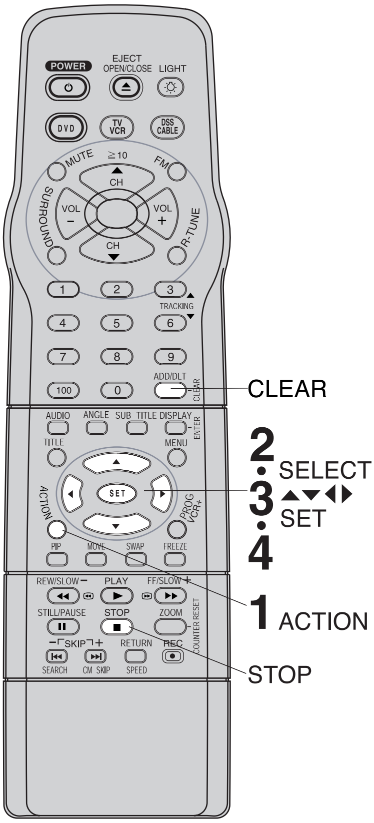
Select RANDOM PLAY.



1) Press ▲▼* to select.

2) Press SET.

- Random play begins.
- To cancel, press STOP during play and then press CLEAR.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
CH
VOL
1 2 3 4 5 6 7 8 9 100 0
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
CLEAR
2 SELECT
3 ▲▼◀▶
4 SET
1 ACTION
STOP

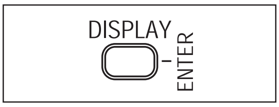
DVD Operation using On-Screen Displays

When DISPLAY is pressed, On-Screen Displays show disc information (title/chapter/track number, elapsed playing time) and unit information (repeat play, play mode).

☑ Check list before you begin.

☐ It is necessary, press DVD to enter DVD mode.

1


DISPLAY
ENTER

Display On-Screen Displays.

Press DISPLAY in play or stop mode.

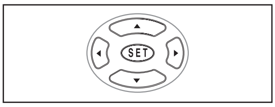
- Each time DISPLAY is pressed, On-Screen Display changes as shown below (refer to page 58 or 59.)

→ Selected disc information
↓
Selected unit information
↓
Normal Screen

Note

DISPLAY button does not function while DVD TITLE MENU is displayed.

2

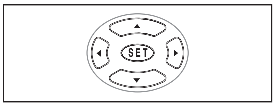


Select the desired item.

1) Press ▲▼ (or ◀ ▶) to select.

2) Press SET to set.

3

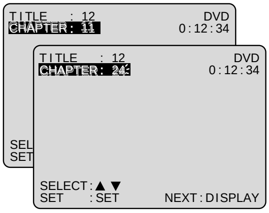


Select the desired setting.

1) Press ▲▼ to select.

2) Press SET to set.

<Example of DVD>


TITLE : 12 DVD
CHAPTER : 11 0:12:34
SEL
SET

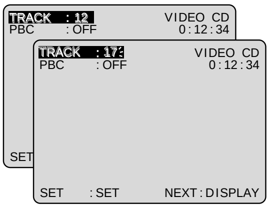
TITLE : 12 DVD
CHAPTER : 24 0:12:34
SELECT : ▲▼
SET : SET NEXT : DISPLAY

- For some functions the setting will be registered immediately without pressing SET.
- When numbers are displayed (e.g. title number), the NUMBERED keys are also available.

To make corrections,
repeatedly press ▲▼ and SET to move to error, then correct.

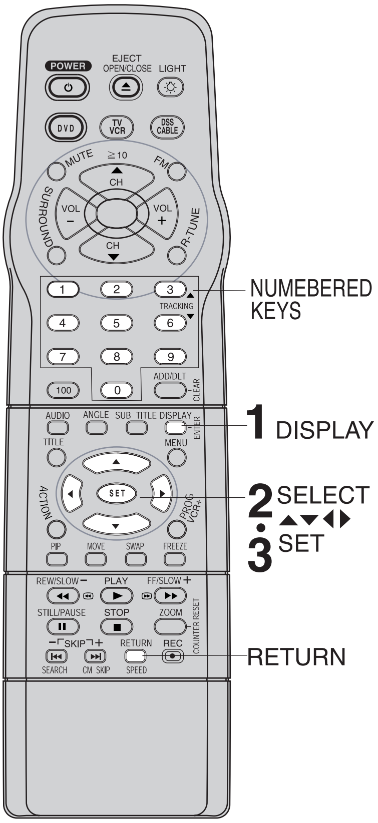
- Pressing ◀ is effective for elapsing time instead of the above buttons. Press ◀ repeatedly to delete the error, then correct.

<Example of Video CD>


TRACK : 12 VIDEO CD
PBC : OFF 0:12:34
SET

TRACK : 17 VIDEO CD
PBC : OFF 0:12:34
SET : SET NEXT : DISPLAY

To return to the normal screen,
press RETURN or DISPLAY repeatedly.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
NUMEBERED KEYS
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
− SKIP +
RETURN
REC
SEARCH
CM SKIP
SPEED
1 DISPLAY
2 SELECT ▲▼◀▶
3 SET
RETURN

Note

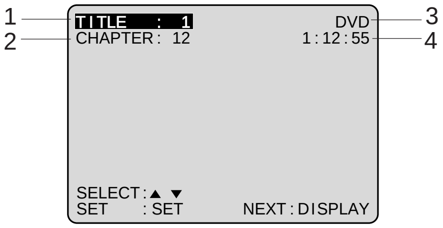
When DISPLAY button is pressed during playback of a Video CD with Playback control, the NUMBERED keys are not available on the displayed screen. In this case, press DISPLAY again to remove the displayed screen.

- When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.

DVD Operation using On-Screen Displays (continued)

Detailed descriptions of each On-Screen Display

Disc information screen (For DVD)



```
TITLE    :  1                 DVD
CHAPTER :  12            1 : 12 : 55

SELECT : ▲ ▼
SET      : SET         NEXT : DISPLAY
```

1. TITLE No.

- Change the No. by pressing ▲▼* or the NUMBERED keys, and press SET.

2. Chapter No.

- Change the No. by pressing ▲▼ or the NUMBERED keys, and press SET.

3. Disc currently being played

4. Elapsed playing time

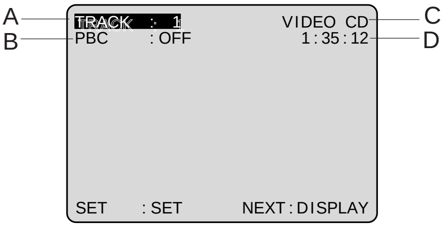
The screen may be changed by selecting the elapsed time.

- Change the elapsed time by pressing NUMBERED keys.

(ex) 01 : 23 : 45 0 ➔ 1 ➔ 2 ➔ 3 ➔ 4 ➔ 5

- This function does not work with some discs.

Disc information screen (For Video CD/CD)



```
TRACK    :  1           VIDEO  CD
PBC        : OFF         1 : 35 : 12

SET      : SET         NEXT : DISPLAY
```

A. Track No.

- Change the No. by pressing ▲▼ or the NUMBERED keys, and press SET.

B. Playback control ON/OFF

[Video CD with playback control only]

ON	Video CD menu play is displayed.
OFF	Video CD menu play is cleared.

C. Disc currently being played

Video CD	CD

D. Elapsed playing time

Note

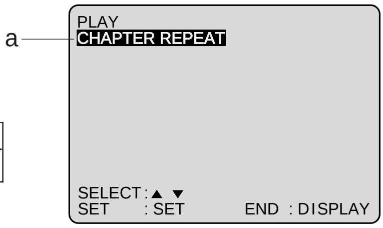
Track NO. and the elapsed playing time are not displayed during menu play of Video CDs with playback control.

- When ⊘ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.

Detailed descriptions of each On-Screen Display

Unit information screen (For Unit)

- Change the desired mode during play by pressing ▲▼, and press SET.



PLAY
CHAPTER REPEAT

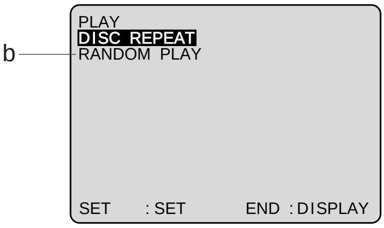
SELECT : ▲ ▼
SET : SET
END : DISPLAY

a. Repeat Play

DVD	CHAPTER REPEAT	TITLE REPEAT	REPEAT OFF
Video CD/CD	TRACK REPEAT	DISC REPEAT	REPEAT OFF

b. Play mode [Video CD/CD only] (See pages 55 or 56.)

PROGRAM PLAY	program play
RANDOM PLAY	random play
-	normal play

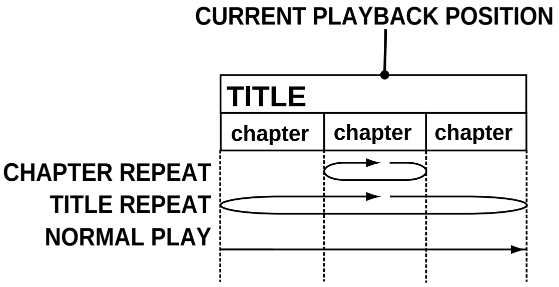


PLAY
DISC REPEAT
RANDOM PLAY

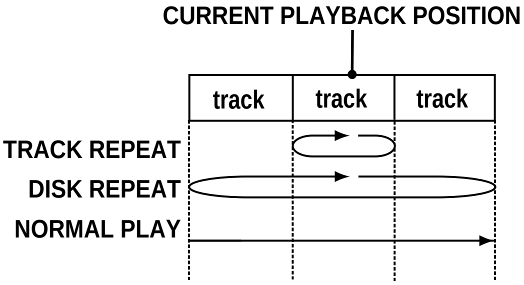
SET : SET
END : DISPLAY

For your reference

- **CHAPTER/TITLE REPEAT PLAY (DVD)**


CURRENT PLAYBACK POSITION
TITLE
chapter
chapter
chapter
CHAPTER REPEAT
TITLE REPEAT
NORMAL PLAY

- **TRACK/DISC REPEAT PLAY (Video CD/CD)**


CURRENT PLAYBACK POSITION
track
track
track
TRACK REPEAT
DISK REPEAT
NORMAL PLAY

Note

- For repeat play in VCR mode, see page 44.

DVD Lock Feature

You can prevent playback of DVDs in a specific rating level which may be unsuitable for children.

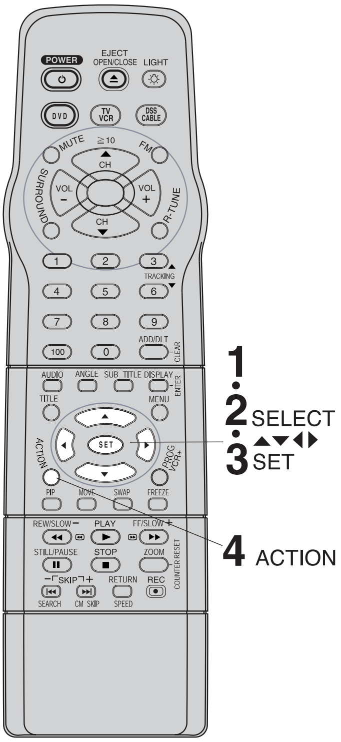
- Some DVDs are encoded with a rating level. If the disc rating is higher (stricter) than the one you preset, playback will be prohibited.

Caution

Discs not encoded with rating level will play even if the jacket states it is for mature audiences. For these discs, the DVD Lock Ratings will not work.

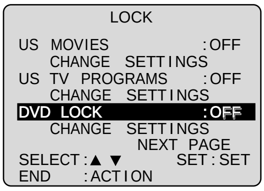
Setup DVD Lock Ratings (DVD only)

Perform DVD Lock setting in TV mode.
Enter your secret code to display LOCK menu.
(Do “Enter Secret Code” steps on page 38.)



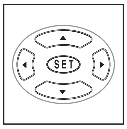
POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
VOL
CH
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB
TITLE
DISPLAY
MENU
ENTER
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
COUNTER RESET
1
2 SELECT ▲▼◀▶
3 SET
4 ACTION

1



LOCK
US MOVIES :OFF
CHANGE SETTINGS
US TV PROGRAMS :OFF
CHANGE SETTINGS
DVD LOCK :OFF
CHANGE SETTINGS
NEXT PAGE
SELECT : ▲ ▼ SET : SET
END : ACTION

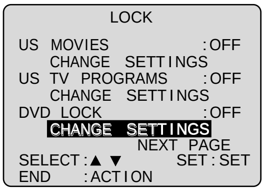
Select DVD LOCK.



1) Press ▲▼* to select.
2) Press SET to set “ON” or “OFF.”

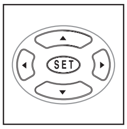
- ■ **“ON” ➔ DVD Lock is activated.**
- ■ **“OFF” ➔ DVD Lock is deactivated.**

2



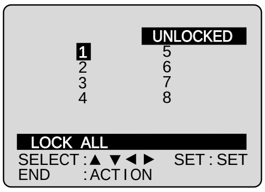
LOCK
US MOVIES :OFF
CHANGE SETTINGS
US TV PROGRAMS :OFF
CHANGE SETTINGS
DVD LOCK :OFF
CHANGE SETTINGS
NEXT PAGE
SELECT : ▲ ▼ SET : SET
END : ACTION

Select CHANGE SETTINGS.



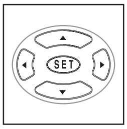
1) Press ▲▼ to select.
2) Press SET to display.

3



UNLOCKED
1 5
2 6
3 7
4 8
LOCK ALL
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

Select RATING LEVEL.



1) Press ▲▼◀ ▶ to select.
2) Press SET to select “LOCKED” or “UNLOCKED.”

LEVEL 1 : LOCK ALL:
Playback of all DVDs is prohibited. (Use to prohibit playback of adult DVDs not encoded with rating level information.)

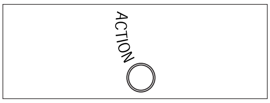
LEVEL 2 : DVDs expressly for children can be played back.

LEVEL 3 to 7 :
DVDs for general audiences/children can be played back. (DVDs for adults are prohibited.)

LEVEL 8 : NO LIMIT:
All DVDs can be played back. (Factory preset)

- Ratings which are highlighted in Green will be blocked; those not highlighted (white letters) will not be blocked.

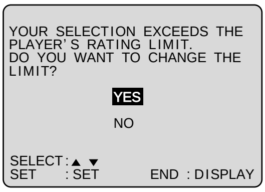
4



End setup.

Press ACTION three times.

<When DVD Lock is activated>



YOUR SELECTION EXCEEDS THE PLAYER’S RATING LIMIT.
DO YOU WANT TO CHANGE THE LIMIT?
YES
NO
SELECT : ▲ ▼
SET : SET END : DISPLAY

After DVD Lock is set and a blocked DVD is played, this message will appear.
The message may differ depending on the disc.

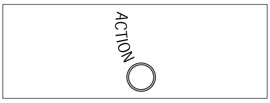
To continue viewing a blocked program for now,
Press ▲▼ to select “YES” and SET.
Then, enter your 4 digit secret code.
When “NO” is selected, blocked programs cannot be viewed.

To change the DVD LOCK settings, after entering your secret code in step 3 on page 38, select “OFF” to deactivate DVD Lock or change the rating level.

Settings for DVD Operation

*Important: if a remote control button does not work when pressed, press the TV/VCR, DVD button on the remote and try the button again.

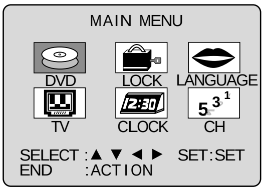
1



Display MAIN MENU.

Press ACTION in stop mode.

2

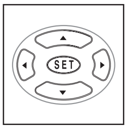

MAIN MENU

DVD LOCK LANGUAGE

TV CLOCK CH

SELECT :▲ ▼ ◄ ► SET:SET
END :ACTION

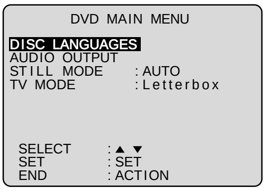
Display DVD screen.



1) Press ▲▼◄► to select.

2) Press SET.

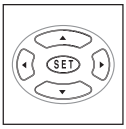
3


DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : AUTO
TV MODE : Letterbox

SELECT : ▲ ▼
SET : SET
END : ACTION

Select the desired item.



1) Press ▲▼ to select.

2) Press SET.

DISC LANGUAGES (See below)
All languages offered on the disc can be set. If the language set is not offered on the disc, the original disc language will be selected.

AUDIO OUTPUT (See page 62.)
You can set the audio output that comes from the digital audio output terminal.

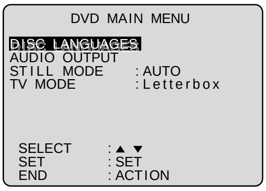
STILL MODE (See page 63.)
To select "Field still" or "Frame still" to prevent jittering from occurring, or make small text or fine patterns clearly visible in a still picture. When AUTO is set "Field Still" or "Frame Still" is selected automatically.

TV MODE (See page 63.)
To select whether the video material for a wide-screen will be played back in the Pan & Scan style or in the Letterbox style on the screen.

Selecting DISC LANGUAGES (DVD only)

To select and set the language of the audio soundtrack, subtitles, or title/DVD menus for all discs to be played.

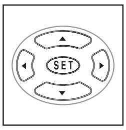
4


DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : AUTO
TV MODE : Letterbox

SELECT : ▲ ▼
SET : SET
END : ACTION

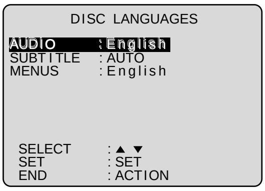
Display DISC LANGUAGES screen.



1) Press ▲▼ to select.

2) Press SET.

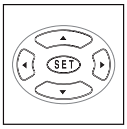
5


DISC LANGUAGES

AUDIO : English
SUBTITLE : AUTO
MENUS : English

SELECT : ▲ ▼
SET : SET
END : ACTION

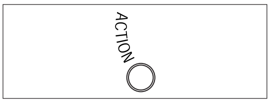
Select the desired item.



1) Press ▲▼ to select.

2) Press SET repeatedly for language. (Refer to the right.)

6



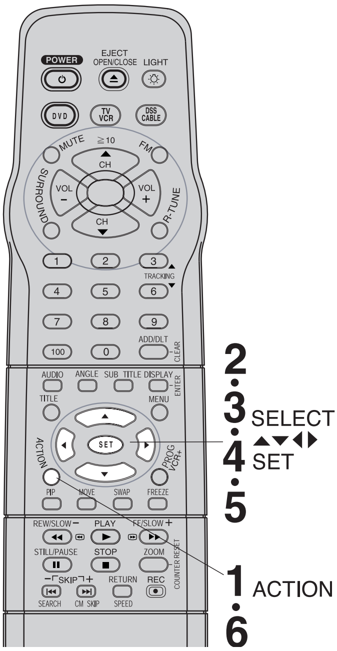
Redisplay DVD menu to continue setup.

Press ACTION and go to step 3 to setup another setting.
Or, to exit, press ACTION three times.

Once initial settings are done, they remain in memory (even after power off) until changed. This means the unit will always operate under the same conditions (especially DVDs) each time.

☑ Check list before you begin.

☐ It is necessary, press TV/VCR to enter TV mode.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED
2
3
4
5
SELECT ▲▼◄►
SET
1
6
ACTION

"AUDIO" selections

To select the audio soundtrack language.

English/French/Spanish (factory preset: English)

Original: Original disc language

OTHER ✶✶✶✶: Other language selection[1]

"SUBTITLE" selections

To select the subtitle language.

AUTO: Same language selected for "AUDIO" (Factory preset)
- If language set for "AUDIO" is used in playback, subtitles will not appear.
- If another language is used during playback, the subtitles will appear in the language selected at "AUDIO" setup.

English/French/Spanish

OTHER ✶✶✶✶: Other language selection[1]

"MENUS" selections

To select the language used in title menus or DVD menus.

English/French/Spanish (factory preset: English)

OTHER ✶✶✶✶: Other language selection[1]

To enter OTHER ✶✶✶✶ code number,
Press NUMBERED keys (Refer to the language codes on page 66).
To make corrections, press ◄ repeatedly to delete language code number, and correct.

[1] If the selected language is not offered, the original disc language is selected.

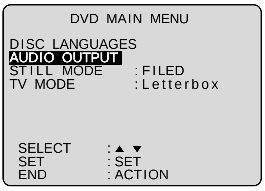
Settings for DVD Operation (continued)

Selecting AUDIO OUTPUT

Select the digital output to be output from the optical digital audio output connector of the unit.

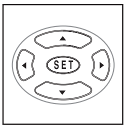
1 **Do steps 1 and 2 on page 61.**

2



```
DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE        : FILED
TV MODE           : Letterbox

  SELECT          : ▲ ▼
  SET             : SET
  END             : ACTION
```

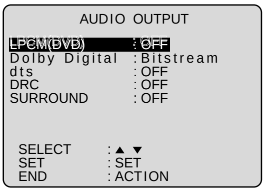
Display AUDIO OUTPUT screen.



1) Press ▲▼* to select.

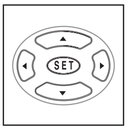
2) Press SET.

3



```
AUDIO OUTPUT

LPCM(DVD)         : OFF
Dolby Digital     : Bitstream
dts               : OFF
DRC               : OFF
SURROUND          : OFF

  SELECT          : ▲ ▼
  SET             : SET
  END             : ACTION
```

Select the desired item.



1) Press ▲▼ to select.

2) Press SET repeatedly for output.

■ "LPCM (DVD)" selections

OFF: Linear PCM of less than 48 kHz/16 bit is output. When playing DVDs recorded in linear PCM of over 48 kHz/20 bit or 96 kHz, no digital audio is output. (Factory preset)

PCM: When playing DVDs recorded in linear PCM of 48 kHz/20 bit/24 bit or 96 kHz, digital audio converted to 48 kHz/16 bit is output. (Digital output of PCM audio is restricted to 48 kHz/16 bit or below for copyright protection.)

■ "Dolby Digital" selections

Bitstream: Dolby Digital (AC-3) bitstream (2ch-5.1ch) is output. (Factory preset)

OFF: No output.

■ "dts" selections

Bitstream: dts bitstream is output. (Factory preset)

OFF: No output.

■ "DRC (Dynamic Range Compression)" selections

OFF: Normal audio range is selected. (Factory preset)

ON: For dynamic sound even at low volume, this is useful for late-night listening. [Dolby Digital (AC-3) DVDs only].

■ "SURROUND" selections

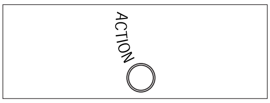
Surround Sound creates the effect of sound coming from non-existent rear speakers even when only connected to a 2-channel stereo system.

OFF: No Surround Sound effect. (Factory preset)

ON: Surround Sound effect.

.

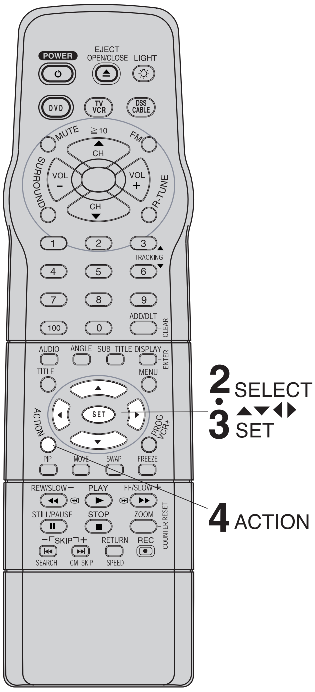
4



Redisplay DVD menu to continue setup.

Press ACTION and go to step 2 to setup another setting.

Or, to exit, press ACTION three times.



Type of amplifier to be connected	Recommended setting		
	LPCM (DVD)	Dolby Digital	dts
No amplifier is connected	OFF	OFF	OFF
AV amplifier (with digital audio input connector) without Dolby Digital/dts decoder	PCM*1	OFF*2	OFF*2
AV amplifier including Dolby Digital decoder	PCM*1	Bitstream	OFF
AV amplifier including Dolby Digital/dts decoder	PCM*1	Bitstream	Bitstream*3

- Make settings according to amplifier connected to optical audio output as shown in above table.
- When a dts decoder is not connected, to enjoy dts DVD, please select audio output other than dts at the dts DVD menu screen. Otherwise, there will be no sound from the unit speakers.

*1 Audio output from unit is converted to 48 kHz/16 bit in addition to audio from digital audio output. To enjoy high quality sound at 48 kHz/20 bit /24 bit or 96 kHz, connect the amplifier or decoder directly to the audio output connectors, not to the digital audio output connector. [Select "OFF" at the "LPCM (DVD)".]

*2 When connecting an amplifier (with an optical digital input connector) which does not contain the Dolby Digital (AC-3) or dts decoder, be sure to select "OFF". If "Bitstream" is selected, starting DVD play may cause such a high level of noise as to be harmful to your ears and damage the speakers.

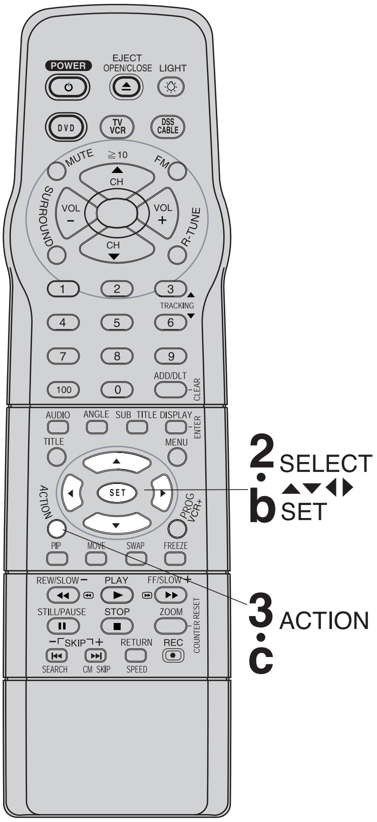
*3 When a dts decoder is connected, please select "Bitstream" in "dts". If "OFF" is selected, there will be no sound.

Notes

- Turn off other surround effects when using this surround effect.
- For optimum effect, the distance between the unit and the listener should be about 3 or 4 times the distance between the right and left front speakers.

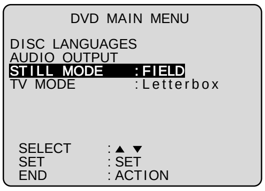
Selecting STILL MODE

Set to reduce jitter in a displayed still picture or a motion picture.


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
FM
SURROUND
R-TUNE
VOL
CH
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
SKIP
RETURN
REC
SEARCH
CM SKIP
SPEED
2
b
SELECT ▲▼◀▶
SET
3
c
ACTION

1 Do steps 1 and 2 on page 61.

2

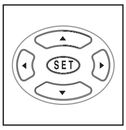


DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : FIELD
TV MODE : Letterbox

SELECT : ▲ ▼
SET : SET
END : ACTION

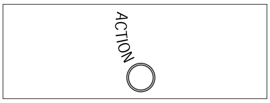
Set STILL MODE.



1) Press ▲▼ to select STILL MODE.
2) Press SET repeatedly to select setting.

AUTO:	"Field still" or "Frame still" is automatically selected during the still mode. (Factory preset)
FIELD:	"Field still" is always selected. Select this setting when jitter occurs in the picture even when "AUTO" is selected.
FRAME:	"Frame still" is always selected. Select this setting when small text or fine patterns cannot be seen clearly even when "AUTO" is selected.

3



Exit this mode.

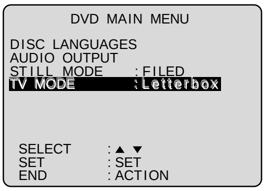
Press ACTION twice.

Selecting TV MODE

Set the screen display style for wide-screen video material playback.

a Do steps 1 and 2 on page 61.

b

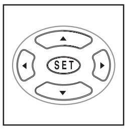


DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : FILED
TV MODE : Letterbox

SELECT : ▲ ▼
SET : SET
END : ACTION

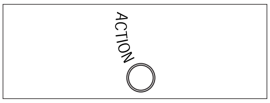
Set TV MODE.



1) Press ▲▼ to select TV MODE.
2) Press SET repeatedly to select setting.

Pan & Scan :	Wide screen video data is played in Pan & Scan style (left and right of screen is trimmed.) (Factory preset) • Video data not formatted in Pan & Scan will play in letterbox style.
Letterbox :	Wide screen video data is played in Letterbox style (top and bottom of screen has black margin).

c

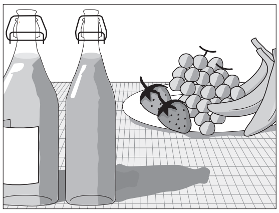


Exit this mode.

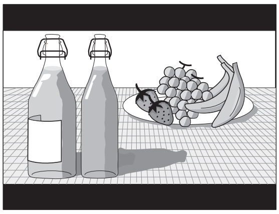
Press ACTION twice.

Example

- Pan & Scan (Factory preset)



- Letterbox



Before Requesting Service

Check the following points once again if you are having trouble with your unit.

Power	Correction
No power…	• Completely insert Power Plug into an AC outlet. • Set POWER button to ON.
Power turns itself off...	• Auto power-off (shutoff) occurs after about 5 min. in DVD mode with no operation, or if there is no broadcast signal in TV or Playback mode. Turn the power back on. (P.20, 46)

Monitor	Correction
No picture or sound...	• Make sure your antenna system (TV or CABLE), is correctly set. (P. 9) • Completely insert Power Plug into an AC outlet. • Set POWER button to ON.
Poor picture with normal sound...	• Adjust BRIGHTNESS, SHARPNESS, and PICTURE controls in the SET UP TV MENU. (P.50, 51)
Poor sound with normal picture...	• Adjust VOLUME control. (P.15)
Poor TV reception...	• Adjust SHARPNESS and PICTURE controls in the SET UP TV MENU. (P.50, 51)
No colour or poor colour...	• Adjust TINT and COLOR controls in the SET UP TV MENU. (P.50, 51)
Ghost (multiple) images...	• Install a directional antenna.
TV programs cannot be watched...	• Make sure the selected channel is in unit’s memory. (P.14)
Channel cannot be selected...	• Only the channel being recorded can be viewed on this unit.

VCR	Correction
TV program cannot be recorded...	• Make sure your antenna system (TV or CABLE), is correctly set. (P. 9) • Make sure cassette record tab is intact. (P. 6)
Timer recording cannot be performed…	• Check that clock is set to current time and date. • Make sure DSS/CABLE box (if used) is left on and tuned to channel to be recorded. • Set recording Start/Stop times correctly. (P.22-23) • Timer recording may not be performed or continued if a power interruption of more than 1 minute occurs before or during a Timer Recording, even after power is restored.
No playback picture, or the playback picture is noisy or contains streaks...	• Adjust TRACKING control in either direction. (P.17) • Try Head Cleaning. (P.8)
VCR cannot be controlled...	• Make sure VCR LOCK is set to off. (P.47)

DVD/Video CD/CD	Correction
Play fails to start even when PLAY is pressed...	• This unit cannot play discs other than DVDs, Video CDs and CDs. • The disc may be dirty and require cleaning.
Play starts but then stops immediately...	• Be sure disc is installed with label side up.
Picture is distorted during rapid advance or rapid reverse...	• The picture will be somewhat distorted at times: this is normal.
No rapid advance (or rapid reverse) play...	• Some discs may have sections which prohibit rapid advance (or rapid reverse).
Play does not start even when title is selected...	• Confirm the “DVD LOCK” setting. (P.60)
Audio soundtrack and/or subtitle language is not the one selected at the initial settings...	• If the audio soundtrack and/or subtitle language selected at DVD initial settings does not exist on the disc, it will not be accessible.
No subtitles...	• Subtitles appear only when available on disc. • “OFF” is selected at the changing subtitle language. Select “ON” to display the subtitles. (P.52)
Alternative audio soundtrack (or subtitle) language cannot be selected...	• Alternative language cannot be selected with discs which do not contain more than one language. • For some discs, alternative language cannot be selected with the AUDIO or SUB TITLE button. Try selecting it from the DVD menu if available.
Angle cannot be changed...	• This function is dependent on software availability. Even if disc has multiple angles, they may be recorded for specific scenes only (ANGLE indicator on unit lights up). (P.53)

Remote Control	Correction
Unit cannot be controlled...	• Aim Remote directly at the remote sensor on the unit. (P.69) • Avoid any object blocking signal path. • Inspect the remote batteries. (P.6) • Make sure VCR LOCK is set to off. (P.47) • Exposing unit remote sensor to direct fluorescent or outdoor light may cause signal interference.
ACTION, PLAY, SELECT, SET POWER, etc. buttons cannot be selected...	• Press TV/VCR for TV-VCR mode. (P.28) • Press DVD for DVD mode. (P.28) • Press FM for FM mode. (P.28) • Check remote batteries.

Miscellaneous	Correction
Video cassette cannot be inserted...	• Insert the cassette window side up; record tab facing you.
Video cassette cannot be removed...	• Completely insert Power Plug into an AC outlet.
Eject does not function or insertion cannot be done...	• Turn the POWER off and then on, and try ejecting or inserting the tape again.
Video cassette ejects when a recording is started, or the power is turned off for timer recording...	• Make sure cassette record tab is intact. (P.6)
The disc cannot be removed...	• First, turn the unit power off. Then, prepare a rigid wire (e.g. an extended paper clip, etc.) and, applying moderate force, insert it straight into the hole at the base of the tray. The tray will eject a little. Now, pull the tray all the way out and remove the disc. (P.68)
In Stop mode, the VCR motor (CYLINDER) continues to rotate...	• To enable Quick Play mechanism, the VCR cylinder will rotate for about 5 minutes. This reduces response time from Stop to Play mode and from Play to Rewind Search mode.

Warning and Instruction Displays

These displays will alert you of a missed operation or provide further instructions.

OSD	Caution	Page
NO CH FOUND PLEASE CHECK ANTENNA CABLE CONNECTION THEN PUSH CH UP KEY AGAIN	• If no active channels are found for CHANNEL MEMORY...	9
PLEASE SET CLOCK BEFORE PROGRAMMING	• If you attempt to set or review a Timer Recording, VCR Plus+ System Programming or set the On-Timer and the Clock is not set...	12, 13
CHECK CASSETTE RECORD TAB	• If you press REC, and a cassette is inserted with no record tab...	6, 18
TO CANCEL TIMER REC HOLD DOWN STOP KEY FOR APPROX 3 SEC	• If you press STOP during a Timer Recording...	23
NO CASSETTE PLEASE INSERT A CASSETTE	• If you press PLAY, FF, REW, or REC without a cassette inserted...	17, 18
PLEASE PREPARE FOR TIMER REC	• If the unit is not in Stop mode or a cassette with record tab is not inserted two minutes before a Timer Recording is about to begin...	22, 23
VIDEO HEADS MAY NEED CLEANING PLEASE INSERT HEAD CLEANING CASSETTE OR REFER TO MANUAL END: PLAY KEY	• If head cleaning becomes necessary while playing back a tape...	8
VCR LOCK ACTIVATED	• If you press a function button other than STOP/EJECT or POWER while the unit is in VCR Lock mode...	47
PLEASE CHECK THE DISC, AND FOR STAINS OR SCRATCHES ON DISC	• If you press PLAY, or the unit reads data from a stained or scratched disc in DVD mode. Also, if the type of disc is other than DVD, Video CD or CD...	7
IT IS PROHIBITED TO COPY DVD/ VIDEO CD/CD TO VHS	• If you press REC in DVD mode...	18

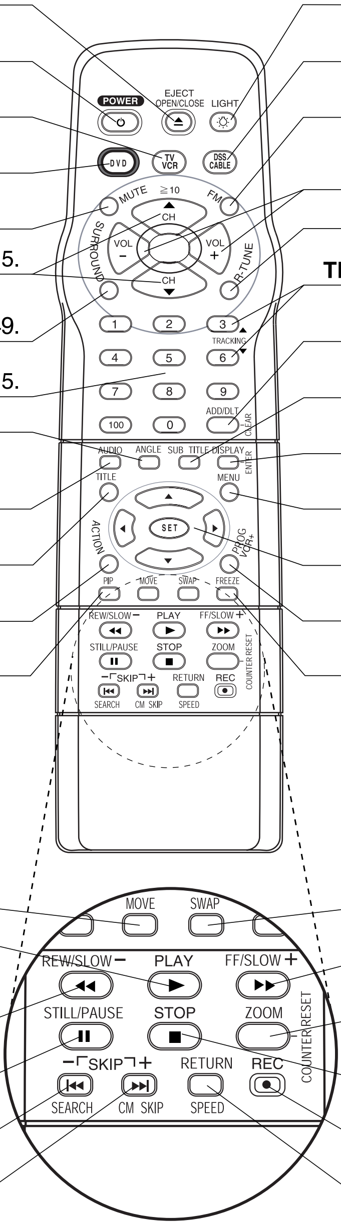
Language Code List

Enter the appropriate code number for the initial settings “AUDIO”, “SUBTITLE” and/or “MENUS” (see page 59).

Code	Language
6565	Afar
6566	Abkhazian
6570	Afrikaans
6577	Ameharic
6582	Arabic
6583	Assamese
6588	Aymara
6590	Azerbaijani
6665	Bashkir
6669	Byelorussian
6671	Bulgarian
6672	Bihari
6678	Bengali; Bangla
6679	Tibetan
6682	Breton
6765	Catalan
6779	Corsican
6783	Czech
6789	Welsh
6865	Danish
6869	German
6890	Bhutani
6976	Greek
6978	English
6979	Esperanto
6983	Spanish
6984	Estonian
6985	Basque
7065	Persian
7073	Finnish
7074	Fiji
7079	Faroese
7082	French
7089	Frisian
7165	Irish
7168	Scots Gaelic
7176	Galician
7178	Guarani
7185	Gujarati
7265	Hausa
7273	Hindi
7282	Croatian
7285	Hungarian
7289	Armenian
7365	Interlingua
7378	Indonesian
7383	Icelandic
7384	Italian
7387	Hebrew
7465	Japanese
7473	Yiddish
7487	Javanese
7565	Georgian
7575	Kazakh
7576	Greenlandic
7577	Cambodian
7578	Kannada
7579	Korean
7583	Kashmiri
7585	Kurdish
7589	Kirghiz
7665	Latin
7678	Lingala
7679	Laothian
7684	Lithuanian
7686	Latvian, Lettish
7771	Malagasy
7773	Maori
7775	Macedonian
7776	Malayalam
7778	Mongolian
7779	Moldavian
7782	Marathi
7783	Malay
7784	Maltese
7789	Burmese
7865	Nauru
7869	Nepali
7876	Dutch
7879	Norwegian
7982	Oriya
8065	Panjabi
8076	Polish
8083	Pashto, Pushto
8084	Portuguese
8185	Quechua
8277	Rhaeto-Romance
8279	Romanian
8285	Russian
8365	Sanskrit
8368	Sindhi
8372	Serbo-Croatian
8373	Singhalese
8375	Slovak
8376	Slovenian
8377	Samoan
8378	Shona
8379	Somali
8381	Albanian
8382	Serbian
8385	Sundanese
8386	Swedish
8387	Swahili
8465	Tamil
8469	Telugu
8471	Tajik
8472	Thai
8473	Tigrinya
8475	Turkmen
8476	Tagalog
8479	Tonga
8482	Turkish
8484	Tatar
8487	Twi
8575	Ukrainian
8582	Urdu
8590	Uzbek
8673	Vietnamese
8679	Volapük
8779	Wolof
8872	Xhosa
8979	Yoruba
9072	Chinese
9085	Zulu

Location of Controls

Remote Control Buttons


POWER
EJECT OPEN/CLOSE
LIGHT
DVD
TV VCR
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG VCR+
PIP
MOVE
SWAP
FREEZE
REW/SLOW−
PLAY
FF/SLOW+
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM SKIP
SPEED

EJECT	Page 17.
POWER	Page 12.
TV-VCR	Page 28.
DVD	Page 20.
MUTE	Page 15.
CHANNEL UP/DOWN	Page 15.
SURROUND	Page 49.
NUMBERED KEYS	Page 15.
ANGLE	Page 53.
AUDIO	Page 16.
TITLE	Page 54.
ACTION	Page 14.
PIP	Page 30.
MOVE	Page 30.
PLAY	Pages 17, 20.
REW/SLOW-	Pages 17, 20.
STILL/PAUSE	Pages 17, 20.
SEARCH/SKIP-	Pages 20, 45.
CM SKIP/SKIP+	Pages 20, 44.

LIGHT	Page 67.
DSS CABLE	Page 28.
FM	Page 34.
VOLUME UP/DOWN	Page 15.
RAPID TUNE	Page 15.
TRACKING UP/DOWN	Page 17.
ADD/DELETE	Page 14.
SUB TITLE	Page 52.
DISPLAY	Pages 37, 57.
MENU	Page 54.
SELECT/SET	Page 14.
PROGRAM	Page 22.
VCR plus+	Page 27.
FREEZE	Page 31.
SWAP	Page 31.
FF/SLOW+	Pages 17, 20.
ZOOM	Page 53.
STOP	Pages 17, 20.
REC	Page 18.
RETURN	Page 20.

Universal Light Tower® Illuminated Remote Control

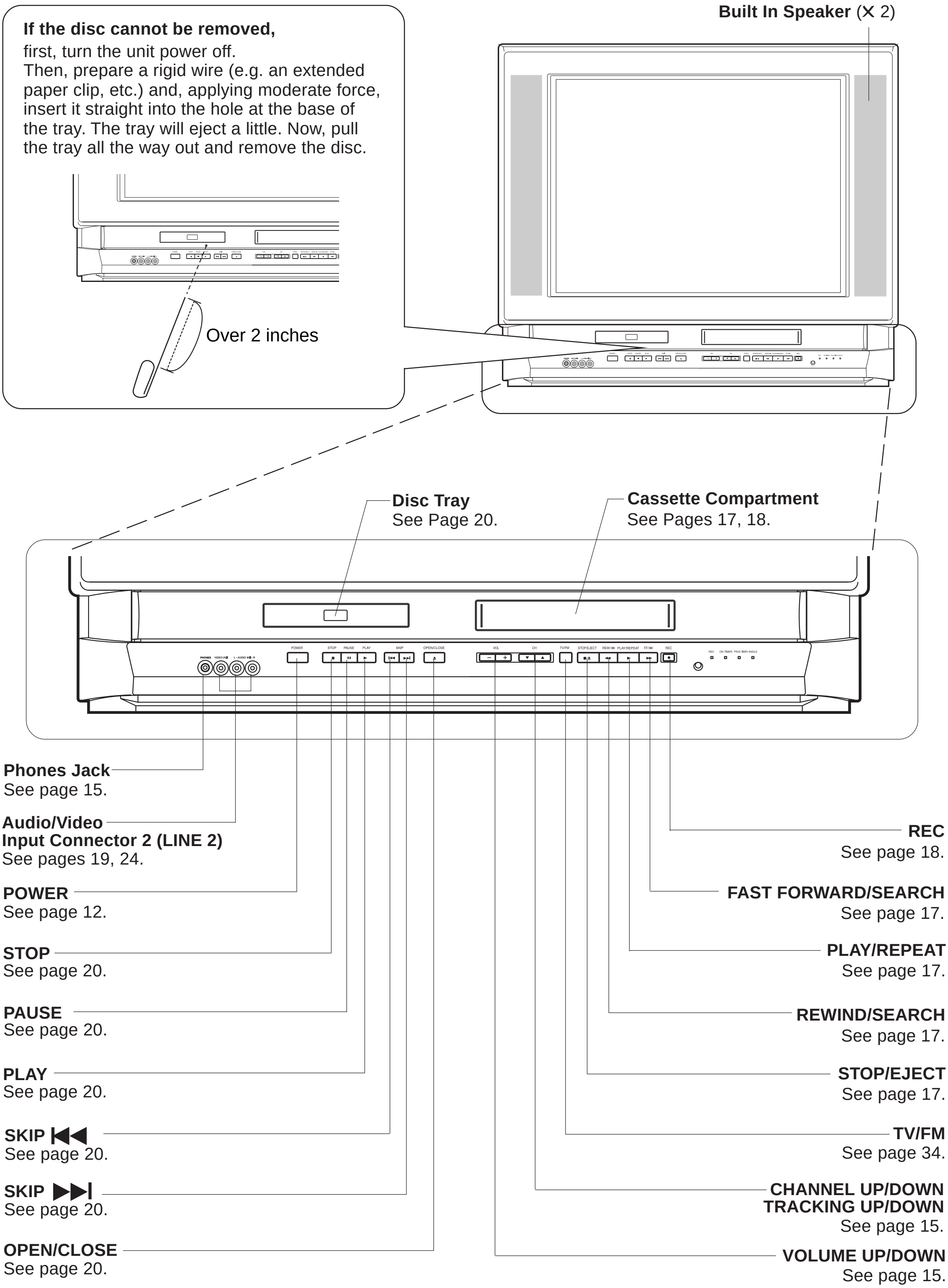
LIGHT button:
When LIGHT is pressed, (DVD, TV VCR, DSS/CABLE, CH UP/DOWN, VOL UP/DOWN) buttons will light for 5 seconds for easy button location.
If no button is pressed in 5 seconds, the light goes out to conserve the battery.

EJECT button:
When this button is pressed in TV-VCR mode, the tape is ejected.
This button is inoperative if pressed during recording.
If pressed in DVD mode, the disc tray opens or closes.

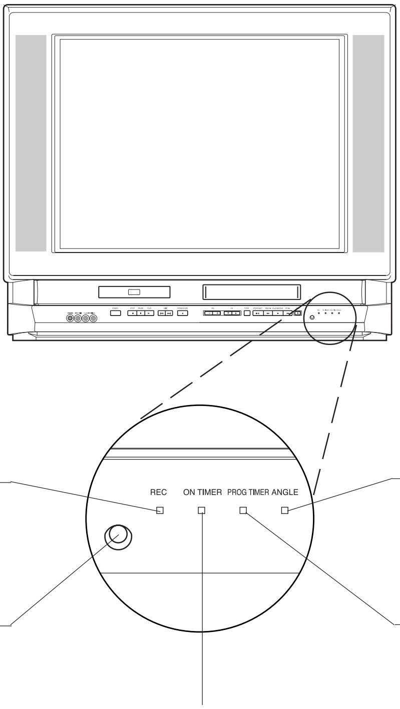
Location of Controls (continued)

Front View of the unit

If the disc cannot be removed,
first, turn the unit power off.
Then, prepare a rigid wire (e.g. an extended paper clip, etc.) and, applying moderate force, insert it straight into the hole at the base of the tray. The tray will eject a little. Now, pull the tray all the way out and remove the disc.


Over 2 inches
Built In Speaker (× 2)
Disc Tray
See Page 20.
Cassette Compartment
See Pages 17, 18.
Phones Jack
See page 15.
Audio/Video
Input Connector 2 (LINE 2)
See pages 19, 24.
POWER
See page 12.
STOP
See page 20.
PAUSE
See page 20.
PLAY
See page 20.
SKIP ◀◀
See page 20.
SKIP ▶▶
See page 20.
OPEN/CLOSE
See page 20.
REC
See page 18.
FAST FORWARD/SEARCH
See page 17.
PLAY/REPEAT
See page 17.
REWIND/SEARCH
See page 17.
STOP/EJECT
See page 17.
TV/FM
See page 34.
CHANNEL UP/DOWN
TRACKING UP/DOWN
See page 15.
VOLUME UP/DOWN
See page 15.

Indicators on the Front Panel



REC Indicator
Lights during recording. In Rec Pause or OTR Pause mode, the indicator flashes. See page 18.

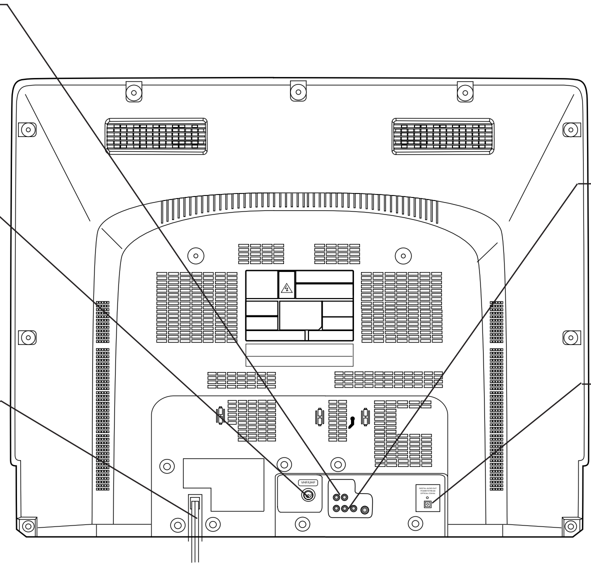
Remote Sensor

ANGLE Indicator
Lights when a scene recorded at different angles is detected. See page 53. (DVD only).

PROG TIMER Indicator
Lights when the unit is set for Timer Recording. It flashes when a Timer Recording has been set with no tape inserted, the clock is not set, or the tape is in motion. See page 23.

ON TIMER Indicator
Lights when the On Timer is set. See page 36.

Rear View of the unit



Audio Output Connector (L/R)
See page 10.

VHF/UHF Antenna Input Terminal
See page 9.

AC Power Plug

Audio/Video Input Connector 1 (LINE 1)
See pages 19, 24.

Optical digital audio output connector
See page 11.

Panasonic®

Panasonic Canada Inc.
5770 Ambler Drive,
Mississauga, Ontario L4W 2T3
(905) 624-5010
www.panasonic.ca

Montréal:
3075 Louis A. Amos, Lachine, Québec H8T 1C4 (514) 633-8684
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Calgary:
6835 - 8th Street N.E., Calgary, Alberta T2E 7H7 (403) 295-3922
Vancouver:
13131 Bathgate Place, Richmond, BC V6V 1Z3 (604) 278-4211

K

Printed in U.S.A.
LSQT0306A
S1000-0

Servicentre List

WARRANTY SERVICE

For product operation and information assistance, please contact your Dealer or our Customer Care Centre at:

Telephone #: (905) 624-5505
Fax #: (905) 238-2360
Web: www.panasonic.ca

For product repairs, please contact one of the following:

- Your Dealer who will inform you of an authorized Servicentre nearest you.
- Our Customer Care Centre at (905) 624-5505 or www.panasonic.ca
- A Panasonic Factory Servicentre listed below:

Richmond, British Columbia

Panasonic Canada Inc.
13131 Bathgate Place
Richmond, BC V6V 1Z3
Tel: (604) 278-4211
Fax: (604) 278-5627

Calgary, Alberta

Panasonic Canada Inc.
6835-8th St. N. E.
Calgary, AB T2E 7H7
Tel: (403) 295-3955
Fax: (403) 274-5493

Mississauga, Ontario

Panasonic Canada Inc.
5770 Ambler Dr.
Mississauga, ON L4W 2T3
Tel: (905) 624-8447
Fax: (905) 238-2418

Lachine, Québec

Panasonic Canada Inc.
3075, rue Louis A. Amos
Lachine, QC H8T 1C4
Tel: (514) 633-8684
Fax: (514) 633-8020

CUSTOMER'S RECORD:

Customer Name: ____________________

Model Number: ____________________ **Serial Number:** ____________________

Date of Purchase: ____________________

Dealer's Name: ____________________

Address: ____________________ **Phone Number:** ____________________

IF YOU SHIP THE PRODUCT TO A SERVICENTRE

Carefully pack and send prepaid, adequately insured and preferably in the original carton.
Include details of the defect claimed, and proof of date of original purchase.

Panasonic Canada Inc.

5770 Ambler Drive, Mississauga, Ontario L4W 2T3

PANASONIC PRODUCT – LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

COMBINATION VHS VCR TV / VCR DVD TV:

21” and under	**Carry-in Service Only**	**Two (2) years, parts (including Picture Tube) and labour**
22” and over	**In-home Service**	**Two (2) years, parts (including Picture Tube) and labour**

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.

This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, EXCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

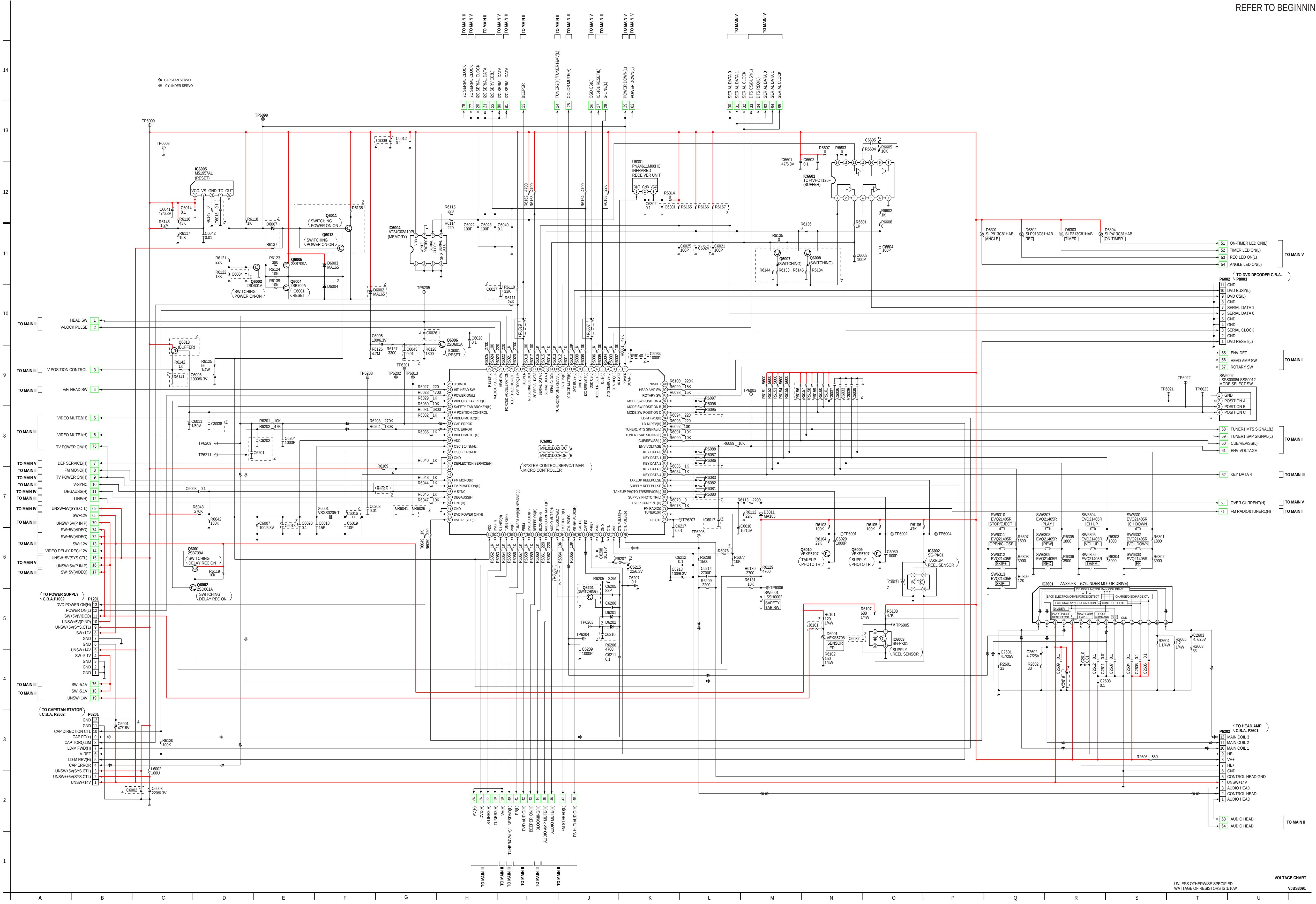
In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

MAIN I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



CAPSTAN SERVO
CYLINDER SERVO
IC6005 M51957AL (RESET)
IC6004 AT24C02A10PI (MEMORY)
IC6001 MN101D02HDC A / MN101D02HDB B
(SYSTEM CONTROL/SERVO/TIMER MICRO CONTROLLER)
U6301 PNA4611M00HC INFRARED RECEIVER UNIT
IC6601 TC74VHCT126F (BUFFER)
IC2601 AN3808K (CYLINDER MOTOR DRIVE)
IC6002 SG-PK01 TAKEUP REEL SENSOR
IC6003 SG-PK01 SUPPLY REEL SENSOR
Q6011 SWITCHING POWER ON-ON
Q6012 SWITCHING POWER ON-ON
Q6005 2SB709A
Q6004 2SB709A IC6001 RESET
Q6003 2SD601A SWITCHING POWER ON-ON
Q6013 (BUFFER)
Q6006 2SD601A IC6001 RESET
Q6007 (SWITCHING)
Q6008 (SWITCHING)
Q6001 2SB709A SWITCHING DELAY REC ON
Q6002 2SD601A SWITCHING DELAY REC ON
Q6201 SWITCHING
Q6010 VEKS5707 TAKEUP PHOTO TR
Q6009 VEKS5707 SUPPLY PHOTO TR
D6001 VEKS5708 SENSOR LED
D6301 SLP913C81HAB ANGLE
D6302 SLP913C81HAB REC
D6303 SLP313C81HAB TIMER
D6304 SLP413C81HAB ON-TIMER
SW6002 LSSS0008/LSSS0012 MODE SELECT SW
SW6001 LSSH0002 SAFETY TAB SW
SW6310 EVQ21405R STOP/EJECT
SW6307 EVQ21405R PLAY
SW6304 EVQ21405R CH UP
SW6301 EVQ21405R CH DOWN
SW6311 EVQ21405R OPEN/CLOSE
SW6308 EVQ21405R REW
SW6305 EVQ21405R VOL UP
SW6302 EVQ21405R VOL DOWN
SW6312 EVQ21405R SKIP+
SW6309 EVQ21405R REC
SW6306 EVQ21405R TV/FM
SW6303 EVQ21405R FF
SW6313 EVQ21405R SKIP-
X6001 VSX50205-T
TO POWER SUPPLY C.B.A. P1002
P1201
TO CAPSTAN STATOR C.B.A. P2502
P6201
TO DVD DECODER C.B.A. P8003
P6002
TO HEAD AMP C.B.A. P2601
P6202
TO MAIN II
TO MAIN III
TO MAIN IV
TO MAIN V
HEAD SW
V-LOCK PULSE
V POSITION CONTROL
HiFi HEAD SW
VIDEO MUTE2(H)
VIDEO MUTE1(H)
TV POWER ON(H)
DEF SERVICE(H)
FM MONO(H)
V-SYNC
DEGAUSS(H)
LINE(H)
DVD POWER ON(H)
POWER ON(L)
ON-TIMER LED ON(L)
TIMER LED ON(L)
REC LED ON(L)
ANGLE LED ON(L)
ENV-DET
HEAD AMP SW
ROTARY SW
TUNER1 MTS SIGNAL(L)
TUNER1 SAP SIGNAL(L)
CUE/REVSS(L)
ENV-VOLTAGE
KEY DATA 4
OVER CURRENT(H)
FM RADIO&TUNER1(H)
AUDIO HEAD
CONTROL HEAD
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
I2C SERIAL CLOCK
I2C SERIAL DATA
BEEPER
SERIAL DATA 0
SERIAL DATA 1
SERIAL CLOCK
DVD RESET(L)
DVD BUSY(L)
DVD CS(L)

VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

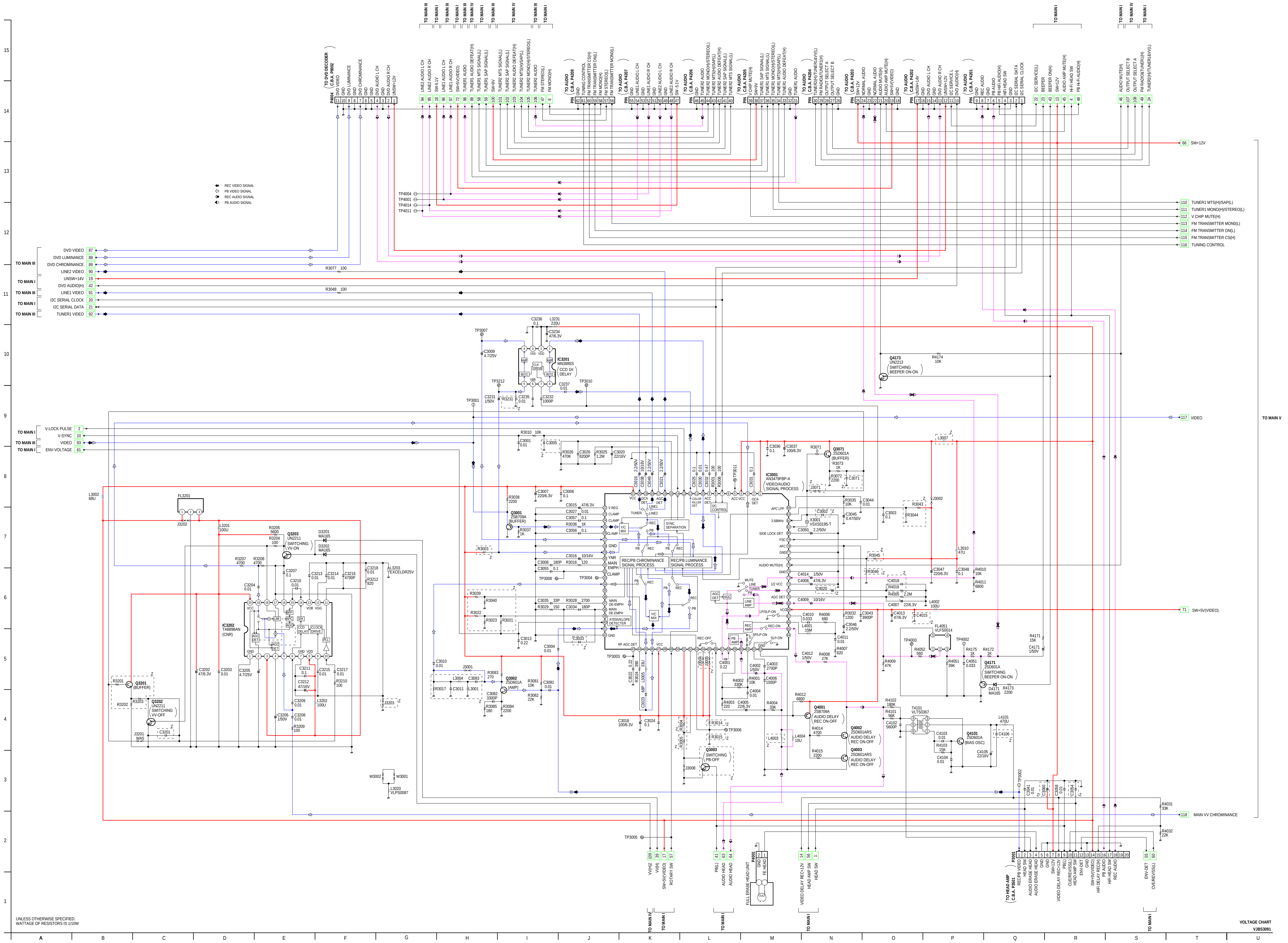
VJBS3091

MAIN II SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



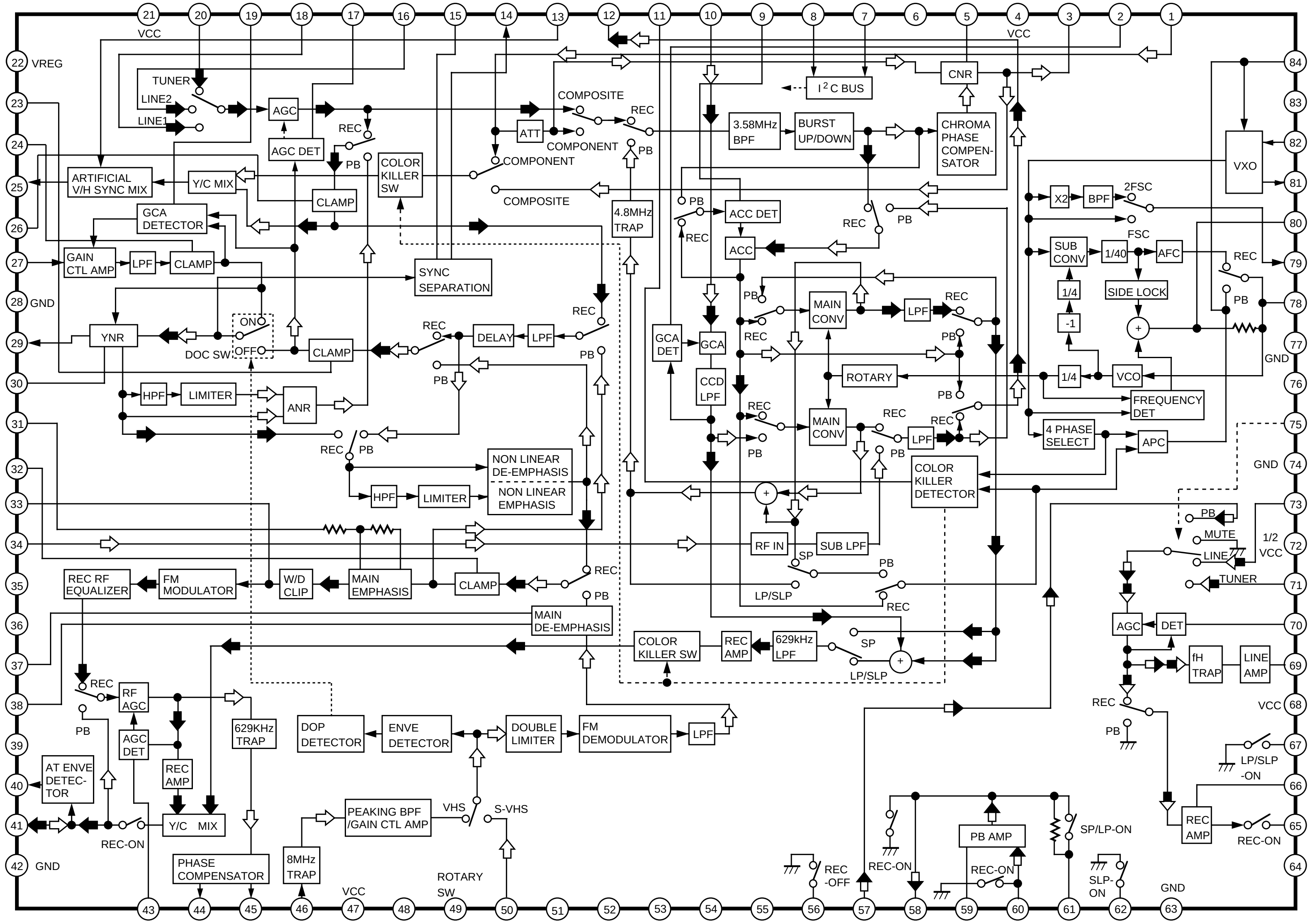
REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
TO DVD DECODER (C.B.A. P8002)
TO MAIN I
TO MAIN III
TO MAIN IV
TO MAIN V
DVD VIDEO
DVD LUMINANCE
DVD CHROMINANCE
LINE2 VIDEO
UNSW+14V
DVD AUDIO(H)
LINE1 VIDEO
I2C SERIAL CLOCK
I2C SERIAL DATA
TUNER1 VIDEO
V-LOCK PULSE
V-SYNC
VIDEO
ENV-VOLTAGE
SW+12V
TUNER1 MTS(H)/SAP(L)
TUNER1 MONO(H)/STEREO(L)
V CHIP MUTE(H)
FM TRANSMITTER MONO(L)
FM TRANSMITTER ON(L)
FM TRANSMITTER CS(H)
TUNING CONTROL
VIDEO
SW+5V(VIDEO)
MAIN VV CHROMINANCE
IC3201 MN3885S CCD 1H DELAY
IC3001 AN3479FBP-A VIDEO/AUDIO SIGNAL PROCESS
IC3202 TA8898AN (CNR)
Q3201 (BUFFER)
Q3202 UN2211 SWITCHING VV-OFF
Q3203 UN2211 SWITCHING VV-ON
Q3001 2SB709A (BUFFER)
Q3002 2SD601A (AMP)
Q3003 SWITCHING PB-OFF
Q3071 2SD601A (BUFFER)
Q4001 2SB709A AUDIO DELAY REC ON-OFF
Q4002 2SD601ARS AUDIO DELAY REC ON-OFF
Q4003 2SD601ARS AUDIO DELAY REC ON-OFF
Q4101 2SD601A (BIAS OSC)
Q4171 2SD601A SWITCHING BEEPER ON-OFF
Q4173 UN2213 SWITCHING BEEPER ON-OFF
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
P4001 FULL ERASE HEAD UNIT
TO HEAD AMP (C.B.A. P5001)

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

VOLTAGE CHART
VJBS3091

IC3001 VIDEO/AUDIO PROCESS IC-DETAIL BLOCK DIAGRAM, AN3479FBP-A

➡ REC VIDEO SIGNAL ⇨ PB VIDEO SIGNAL ➡ REC AUDIO SIGNAL ⇨ PB AUDIO SIGNAL



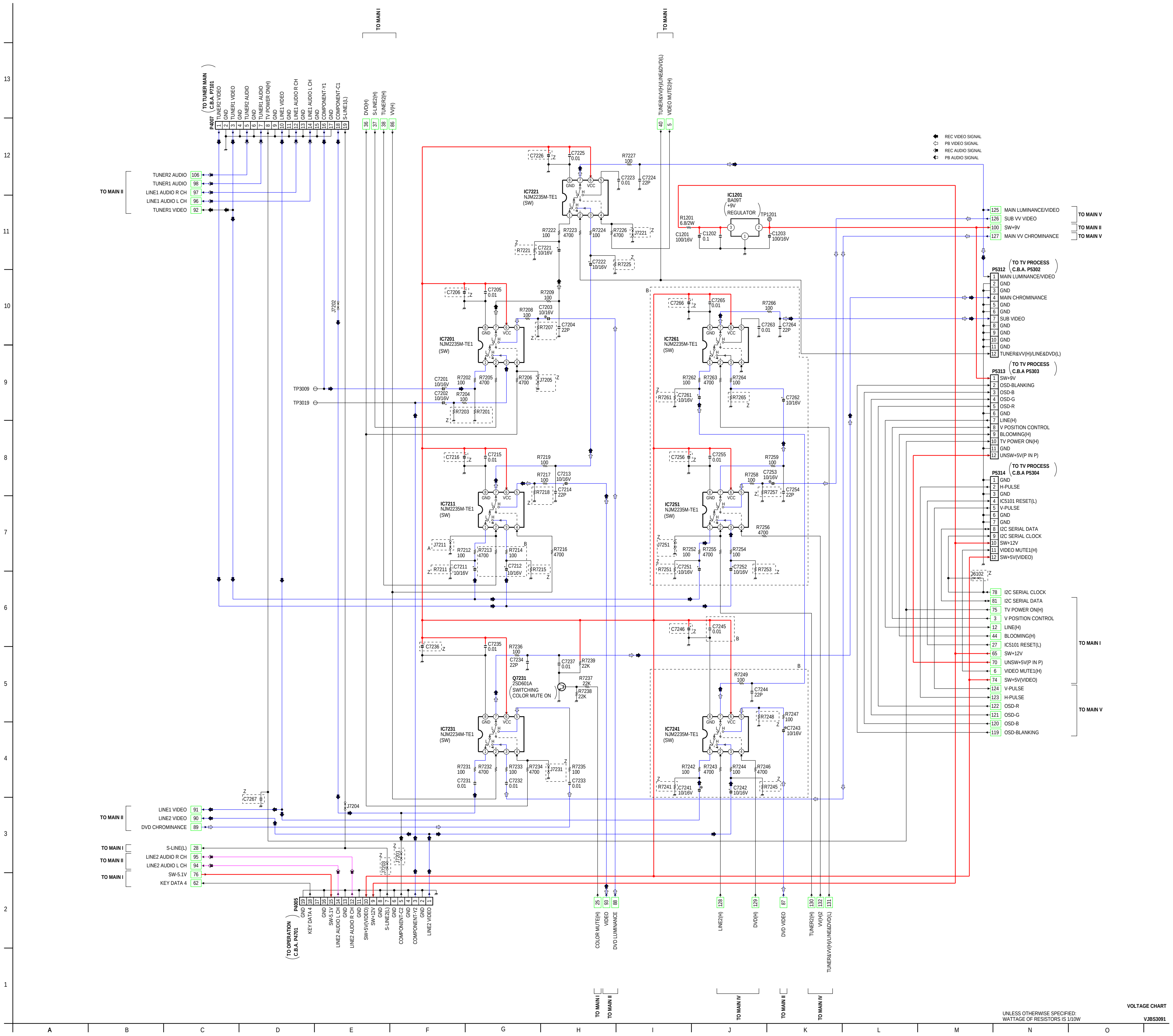
VCC
VREG
TUNER
LINE2
LINE1
AGC
AGC DET
REC
PB
COLOR KILLER SW
COMPOSITE
ATT
COMPONENT
COMPONENT
COMPOSITE
3.58MHz BPF
BURST UP/DOWN
I 2 C BUS
CNR
CHROMA PHASE COMPEN-SATOR
VCC
VXO
X2
BPF
2FSC
FSC
SUB CONV
1/40
AFC
1/4
-1
SIDE LOCK
1/4
VCO
FREQUENCY DET
4 PHASE SELECT
APC
ARTIFICIAL V/H SYNC MIX
Y/C MIX
CLAMP
GCA DETECTOR
GAIN CTL AMP
LPF
CLAMP
SYNC SEPARATION
4.8MHz TRAP
ACC DET
ACC
GND
YNR
ON
OFF
DOC SW
CLAMP
DELAY
LPF
GCA DET
GCA
CCD LPF
MAIN CONV
LPF
ROTARY
MAIN CONV
LPF
HPF
LIMITER
ANR
NON LINEAR DE-EMPHASIS
NON LINEAR EMPHASIS
HPF
LIMITER
COLOR KILLER DETECTOR
RF IN
SUB LPF
SP
LP/SLP
REC RF EQUALIZER
FM MODULATOR
W/D CLIP
MAIN EMPHASIS
CLAMP
MAIN DE-EMPHASIS
COLOR KILLER SW
REC AMP
629kHz LPF
SP
LP/SLP
RF AGC
AGC DET
REC AMP
629KHz TRAP
DOP DETECTOR
ENVE DETECTOR
DOUBLE LIMITER
FM DEMODULATOR
LPF
AT ENVE DETEC-TOR
Y/C MIX
REC-ON
PHASE COMPENSATOR
8MHz TRAP
PEAKING BPF /GAIN CTL AMP
VHS
S-VHS
VCC
ROTARY SW
GND
PB
MUTE
LINE
1/2 VCC
TUNER
AGC
DET
fH TRAP
LINE AMP
VCC
LP/SLP -ON
REC AMP
REC-ON
REC -OFF
REC-ON
PB AMP
REC-ON
SP/LP-ON
SLP-ON
GND
GND
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84

MAIN III SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



TO MAIN I
TO TUNER MAIN C.B.A. P1101
P4007
TUNER2 VIDEO
GND
TUNER1 VIDEO
GND
TUNER2 AUDIO
GND
TUNER1 AUDIO
TV POWER ON(H)
GND
LINE1 VIDEO
GND
LINE1 AUDIO R CH
GND
LINE1 AUDIO L CH
GND
COMPONENT-Y1
GND
COMPONENT-C1
S-LINE1(L)
DVD(H)
S-LINE(H)
TUNER(H)
VV(H)
TUNER&VV(H)/LINE&DVD(L)
VIDEO MUTE1(H)
TO MAIN II
TUNER2 AUDIO 106
TUNER1 AUDIO 98
LINE1 AUDIO R CH 97
LINE1 AUDIO L CH 96
TUNER1 VIDEO 92
REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC7221 NJM2235M-TE1 (SW)
IC1201 BA09T +9V REGULATOR
TP1201
R1201 6.8/2W
C1201 100/16V
C1202 0.1
C1203 100/16V
IC7201 NJM2235M-TE1 (SW)
IC7261 NJM2235M-TE1 (SW)
IC7211 NJM2235M-TE1 (SW)
IC7251 NJM2235M-TE1 (SW)
IC7231 NJM2234M-TE1 (SW)
IC7241 NJM2235M-TE1 (SW)
Q7231 2SD601A SWITCHING COLOR MUTE ON
TP3009
TP3019
125 MAIN LUMINANCE/VIDEO
126 SUB VV VIDEO
100 SW+9V
127 MAIN VV CHROMINANCE
TO MAIN V
TO MAIN II
TO MAIN V
TO TV PROCESS C.B.A. P5302
P5312
1 MAIN LUMINANCE/VIDEO
2 GND
3 GND
4 MAIN CHROMINANCE
5 GND
6 GND
7 SUB VIDEO
8 GND
9 GND
10 GND
11 GND
12 TUNER&VV(H)/LINE&DVD(L)
TO TV PROCESS C.B.A P5303
P5313
1 SW+9V
2 OSD-BLANKING
3 OSD-B
4 OSD-G
5 OSD-R
6 GND
7 LINE(H)
8 V POSITION CONTROL
9 BLOOMING(H)
10 TV POWER ON(H)
11 GND
12 UNSW+5V(P IN P)
TO TV PROCESS C.B.A P5304
P5314
1 GND
2 H-PULSE
3 GND
4 IC5101 RESET(L)
5 V-PULSE
6 GND
7 GND
8 I2C SERIAL DATA
9 I2C SERIAL CLOCK
10 SW+12V
11 VIDEO MUTE1(H)
12 SW+5V(VIDEO)
J6102
78 I2C SERIAL CLOCK
81 I2C SERIAL DATA
75 TV POWER ON(H)
3 V POSITION CONTROL
12 LINE(H)
44 BLOOMING(H)
27 IC5101 RESET(L)
65 SW+12V
70 UNSW+5V(P IN P)
6 VIDEO MUTE1(H)
74 SW+5V(VIDEO)
TO MAIN I
124 V-PULSE
123 H-PULSE
122 OSD-R
121 OSD-G
120 OSD-B
119 OSD-BLANKING
TO MAIN V
TO MAIN II
LINE1 VIDEO 91
LINE2 VIDEO 90
DVD CHROMINANCE 89
TO MAIN I
S-LINE(L) 28
TO MAIN II
LINE2 AUDIO R CH 95
LINE2 AUDIO L CH 94
TO MAIN I
SW-5.1V 76
KEY DATA 4 62
TO OPERATION C.B.A. P4701
P4005
GND
KEY DATA 4
SW-5.1V
LINE2 AUDIO L CH
GND
LINE2 AUDIO R CH
GND
SW+5V(VIDEO)
SW+12V
GND
S-LINE2(L)
GND
COMPONENT-C2
GND
COMPONENT-Y2
GND
LINE2 VIDEO
COLOR MUTE(H) 25
VIDEO 93
DVD LUMINANCE 88
LINE2(H) 128
DVD(H) 129
DVD VIDEO 87
TUNER2(H) 130
VV(H) 132
TUNER&VV(H)/LINE&DVD(L) 131
TO MAIN I
TO MAIN II
TO MAIN IV
TO MAIN II
TO MAIN IV
J7202
J7204
J7201
J7203
C7267
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

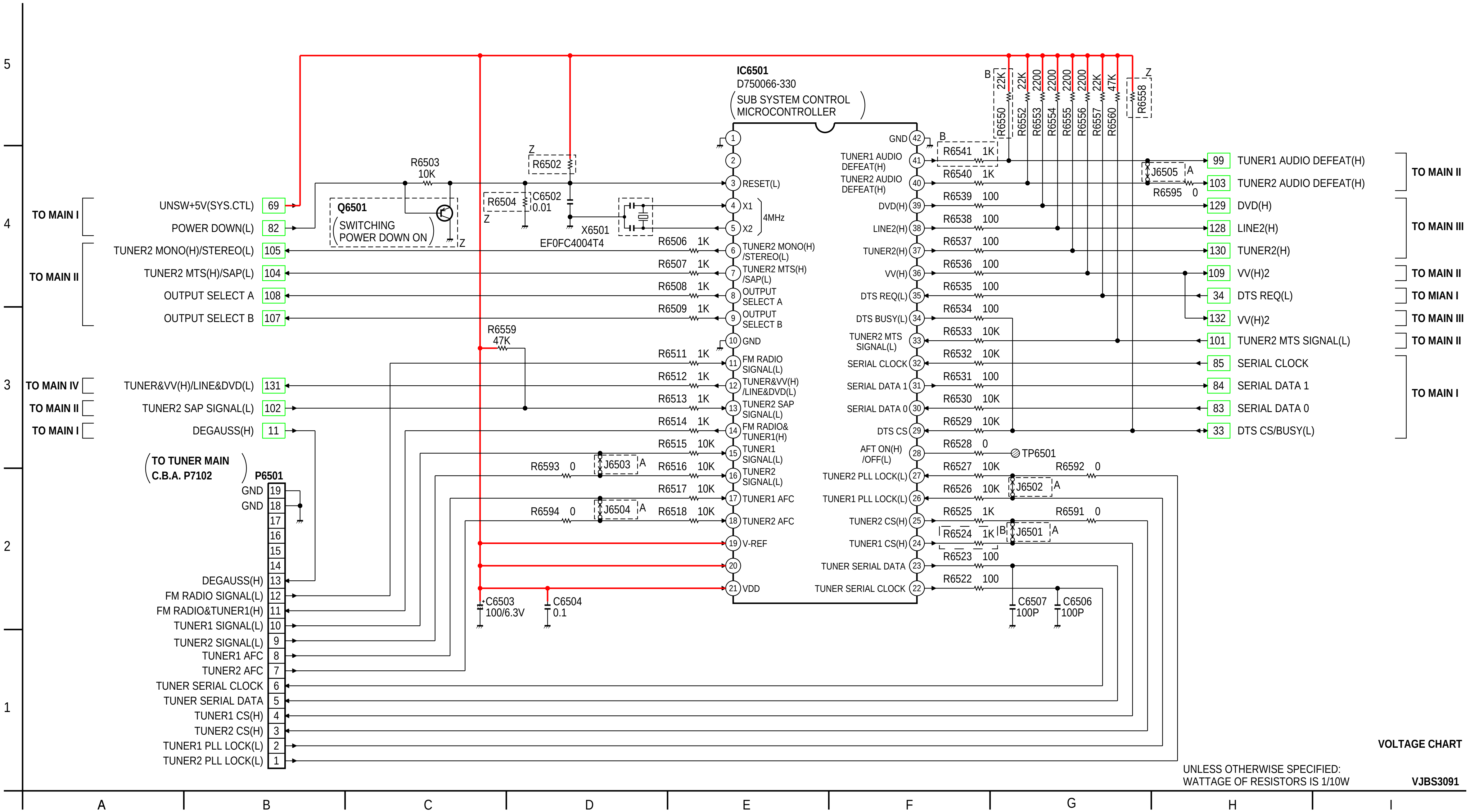
VJBS3091

MAIN IV SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



IC6501
D750066-330
SUB SYSTEM CONTROL MICROCONTROLLER
TO MAIN I
UNSW+5V(SYS.CTL) 69
POWER DOWN(L) 82
TO MAIN II
TUNER2 MONO(H)/STEREO(L) 105
TUNER2 MTS(H)/SAP(L) 104
OUTPUT SELECT A 108
OUTPUT SELECT B 107
TO MAIN IV
TUNER&VV(H)/LINE&DVD(L) 131
TO MAIN II
TUNER2 SAP SIGNAL(L) 102
TO MAIN I
DEGAUSS(H) 11
TO TUNER MAIN C.B.A. P7102
P6501
GND 19
GND 18
17
16
15
14
DEGAUSS(H) 13
FM RADIO SIGNAL(L) 12
FM RADIO&TUNER1(H) 11
TUNER1 SIGNAL(L) 10
TUNER2 SIGNAL(L) 9
TUNER1 AFC 8
TUNER2 AFC 7
TUNER SERIAL CLOCK 6
TUNER SERIAL DATA 5
TUNER1 CS(H) 4
TUNER2 CS(H) 3
TUNER1 PLL LOCK(L) 2
TUNER2 PLL LOCK(L) 1
Q6501
SWITCHING POWER DOWN ON
R6503 10K
R6502
R6504
C6502 0.01
X6501 EF0FC4004T4
4MHz
R6506 1K
R6507 1K
R6508 1K
R6509 1K
R6559 47K
R6511 1K
R6512 1K
R6513 1K
R6514 1K
R6515 10K
R6593 0
J6503
R6516 10K
R6517 10K
R6594 0
J6504
R6518 10K
C6503 100/6.3V
C6504 0.1
1
2
3 RESET(L)
4 X1
5 X2
6 TUNER2 MONO(H) /STEREO(L)
7 TUNER2 MTS(H) /SAP(L)
8 OUTPUT SELECT A
9 OUTPUT SELECT B
10 GND
11 FM RADIO SIGNAL(L)
12 TUNER&VV(H) /LINE&DVD(L)
13 TUNER2 SAP SIGNAL(L)
14 FM RADIO& TUNER1(H)
15 TUNER1 SIGNAL(L)
16 TUNER2 SIGNAL(L)
17 TUNER1 AFC
18 TUNER2 AFC
19 V-REF
20
21 VDD
GND 42
TUNER1 AUDIO DEFEAT(H) 41
TUNER2 AUDIO DEFEAT(H) 40
DVD(H) 39
LINE2(H) 38
TUNER2(H) 37
VV(H) 36
DTS REQ(L) 35
DTS BUSY(L) 34
TUNER2 MTS SIGNAL(L) 33
SERIAL CLOCK 32
SERIAL DATA 1 31
SERIAL DATA 0 30
DTS CS 29
AFT ON(H) /OFF(L) 28
TUNER2 PLL LOCK(L) 27
TUNER1 PLL LOCK(L) 26
TUNER2 CS(H) 25
TUNER1 CS(H) 24
TUNER SERIAL DATA 23
TUNER SERIAL CLOCK 22
R6550 22K
R6552 22K
R6553 2200
R6554 2200
R6555 2200
R6556 2200
R6557 22K
R6560 47K
R6558
R6541 1K
R6540 1K
R6539 100
R6538 100
R6537 100
R6536 100
R6535 100
R6534 100
R6533 10K
R6532 10K
R6531 100
R6530 10K
R6529 10K
R6528 0
TP6501
R6527 10K
R6692 0
R6526 10K
J6502
R6525 1K
R6591 0
R6524 1K
J6501
R6523 100
R6522 100
C6507 100P
C6506 100P
J6505
R6595 0
99 TUNER1 AUDIO DEFEAT(H)
103 TUNER2 AUDIO DEFEAT(H)
TO MAIN II
129 DVD(H)
128 LINE2(H)
130 TUNER2(H)
TO MAIN III
109 VV(H)2
TO MAIN II
34 DTS REQ(L)
TO MIAN I
132 VV(H)2
TO MAIN III
101 TUNER2 MTS SIGNAL(L)
TO MAIN II
85 SERIAL CLOCK
84 SERIAL DATA 1
83 SERIAL DATA 0
33 DTS CS/BUSY(L)
TO MAIN I
A
B
Z
1
2
3
4
5
A
B
C
D
E
F
G
H
I

VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

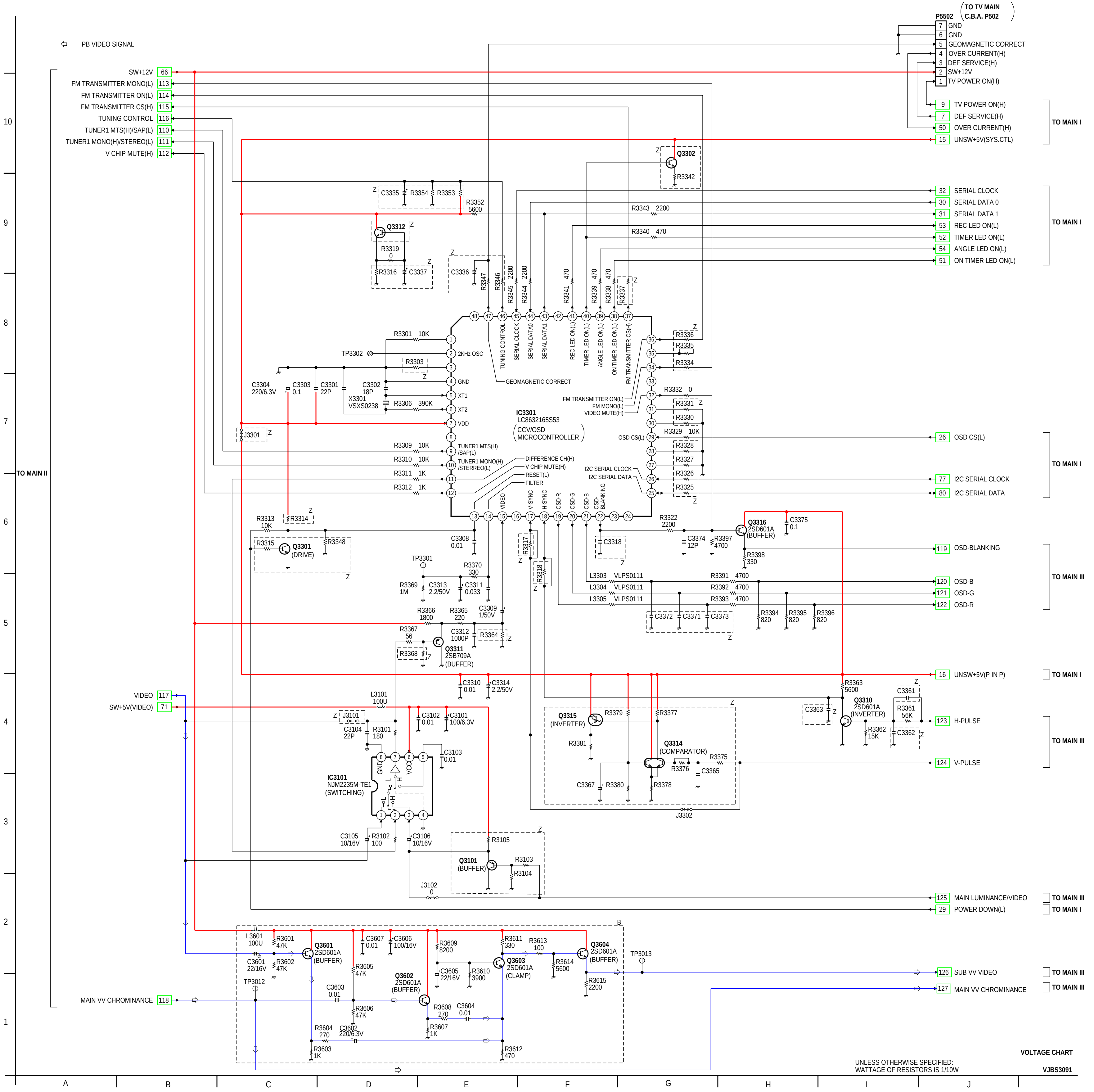
VJBS3091

MAIN V SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



PB VIDEO SIGNAL
P5502
TO TV MAIN C.B.A. P502
7 GND
6 GND
5 GEOMAGNETIC CORRECT
4 OVER CURRENT(H)
3 DEF SERVICE(H)
2 SW+12V
1 TV POWER ON(H)
9 TV POWER ON(H)
7 DEF SERVICE(H)
50 OVER CURRENT(H)
15 UNSW+5V(SYS.CTL)
TO MAIN I
32 SERIAL CLOCK
30 SERIAL DATA 0
31 SERIAL DATA 1
53 REC LED ON(L)
52 TIMER LED ON(L)
54 ANGLE LED ON(L)
51 ON TIMER LED ON(L)
26 OSD CS(L)
77 I2C SERIAL CLOCK
80 I2C SERIAL DATA
119 OSD-BLANKING
120 OSD-B
121 OSD-G
122 OSD-R
TO MAIN III
16 UNSW+5V(P IN P)
123 H-PULSE
124 V-PULSE
125 MAIN LUMINANCE/VIDEO
29 POWER DOWN(L)
126 SUB VV VIDEO
127 MAIN VV CHROMINANCE
SW+12V 66
FM TRANSMITTER MONO(L) 113
FM TRANSMITTER ON(L) 114
FM TRANSMITTER CS(H) 115
TUNING CONTROL 116
TUNER1 MTS(H)/SAP(L) 110
TUNER1 MONO(H)/STEREO(L) 111
V CHIP MUTE(H) 112
TO MAIN II
VIDEO 117
SW+5V(VIDEO) 71
MAIN VV CHROMINANCE 118
IC3301
LC8632165S53
(CCV/OSD MICROCONTROLLER)
2KHz OSC
GND
XT1
XT2
VDD
TUNER1 MTS(H) /SAP(L)
TUNER1 MONO(H) /STEREO(L)
DIFFERENCE CH(H)
V CHIP MUTE(H)
RESET(L)
FILTER
TUNING CONTROL
SERIAL CLOCK
SERIAL DATA0
SERIAL DATA1
REC LED ON(L)
TIMER LED ON(L)
ANGLE LED ON(L)
ON TIMER LED ON(L)
FM TRANSMITTER CS(H)
GEOMAGNETIC CORRECT
FM TRANSMITTER ON(L)
FM MONO(L)
VIDEO MUTE(H)
OSD CS(L)
I2C SERIAL CLOCK
I2C SERIAL DATA
VIDEO
V-SYNC
H-SYNC
OSD-R
OSD-G
OSD-B
OSD-BLANKING
Q3302
Q3312
Q3301 (DRIVE)
Q3311 2SB709A (BUFFER)
Q3316 2SD601A (BUFFER)
Q3315 (INVERTER)
Q3314 (COMPARATOR)
Q3310 2SD601A (INVERTER)
Q3101 (BUFFER)
IC3101 NJM2235M-TE1 (SWITCHING)
Q3601 2SD601A (BUFFER)
Q3602 2SD601A (BUFFER)
Q3603 2SD601A (CLAMP)
Q3604 2SD601A (BUFFER)
X3301 VSX50238
L3303 VLPS0111
L3304 VLPS0111
L3305 VLPS0111
L3101 100U
L3601 100U
TP3301
TP3302
TP3012
TP3013
J3301
J3101
J3102 0
J3302
R3301 10K
R3306 390K
R3309 10K
R3310 10K
R3311 1K
R3312 1K
R3313 10K
R3343 2200
R3340 470
R3332 0
R3329 10K
R3322 2200
R3397 4700
R3398 330
R3391 4700
R3392 4700
R3393 4700
R3394 820
R3395 820
R3396 820
R3363 5600
R3361 56K
R3362 15K
R3370 330
R3369 1M
R3365 220
R3366 1800
R3367 56
R3352 5600
R3319 0
R3101 180
R3102 100
R3601 47K
R3602 47K
R3603 1K
R3604 270
R3605 47K
R3606 47K
R3607 1K
R3608 270
R3609 8200
R3610 3900
R3611 330
R3612 470
R3613 100
R3614 5600
R3615 2200
C3304 220/6.3V
C3303 0.1
C3301 22P
C3302 18P
C3308 0.01
C3313 2.2/50V
C3311 0.033
C3309 1/50V
C3312 1000P
C3310 0.01
C3314 2.2/50V
C3374 12P
C3375 0.1
C3102 0.01
C3101 100/6.3V
C3103 0.01
C3104 22P
C3105 10/16V
C3106 10/16V
C3601 22/16V
C3602 220/6.3V
C3603 0.01
C3604 0.01
C3605 22/16V
C3606 100/16V
C3607 0.01
A
B
C
D
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VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

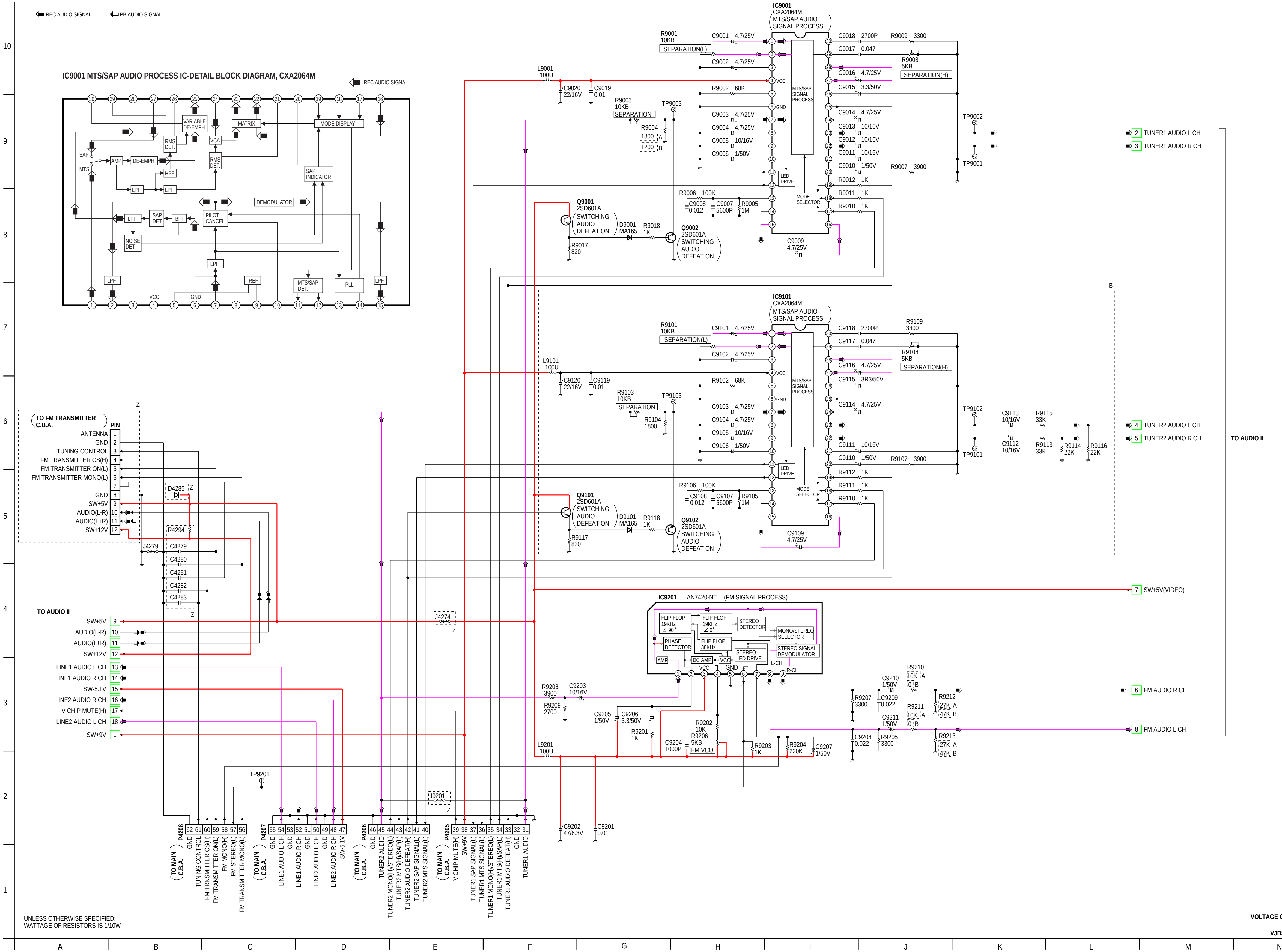
VJBS3091

AUDIO I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC9001 MTS/SAP AUDIO PROCESS IC-DETAIL BLOCK DIAGRAM, CXA2064M
VARIABLE DE-EMPH.
MATRIX
MODE DISPLAY
RMS DET.
VCA
SAP
MTS
AMP
DE-EMPH.
HPF
LPF
SAP INDICATOR
DEMODULATOR
SAP DET.
BPF
PILOT CANCEL
NOISE DET.
IREF
MTS/SAP DET.
PLL
VCC
GND
IC9001
CXA2064M
MTS/SAP AUDIO SIGNAL PROCESS
LED DRIVE
MODE SELECTOR
SEPARATION(L)
SEPARATION(H)
SEPARATION
L9001 100U
C9020 22/16V
C9019 0.01
R9001 10KB
R9003 10KB
R9004 1800 A 1200 B
TP9003
TP9002
TP9001
Q9001 2SD601A SWITCHING AUDIO DEFEAT ON
Q9002 2SD601A SWITCHING AUDIO DEFEAT ON
D9001 MA165
R9017 820
R9018 1K
IC9101
CXA2064M
MTS/SAP AUDIO SIGNAL PROCESS
Q9101 2SD601A SWITCHING AUDIO DEFEAT ON
Q9102 2SD601A SWITCHING AUDIO DEFEAT ON
D9101 MA165
TP9103
TP9102
TP9101
L9101 100U
2 TUNER1 AUDIO L CH
3 TUNER1 AUDIO R CH
4 TUNER2 AUDIO L CH
5 TUNER2 AUDIO R CH
7 SW+5V(VIDEO)
6 FM AUDIO R CH
8 FM AUDIO L CH
TO AUDIO II
IC9201 AN7420-NT (FM SIGNAL PROCESS)
FLIP FLOP 19KHz ∠90°
FLIP FLOP 19KHz ∠0°
STEREO DETECTOR
MONO/STEREO SELECTOR
PHASE DETECTOR
FLIP FLOP 38KHz
STEREO SIGNAL DEMODULATOR
AMP
DC AMP
VCO
STEREO LED DRIVE
L-CH
R-CH
FM VCO
L9201 100U
TP9201
J4274
J9201
TO FM TRANSMITTER C.B.A.
PIN
ANTENNA 1
GND 2
TUNING CONTROL 3
FM TRANSMITTER CS(H) 4
FM TRANSMITTER ON(L) 5
FM TRANSMITTER MONO(L) 6
7
GND 8
SW+5V 9
AUDIO(L-R) 10
AUDIO(L+R) 11
SW+12V 12
D4285
R4294
J4279
C4279
C4280
C4281
C4282
C4283
TO AUDIO II
SW+5V 9
AUDIO(L-R) 10
AUDIO(L+R) 11
SW+12V 12
LINE1 AUDIO L CH 13
LINE1 AUDIO R CH 14
SW-5.1V 15
LINE2 AUDIO R CH 16
V CHIP MUTE(H) 17
LINE2 AUDIO L CH 18
SW+9V 1
P4208 (TO MAIN C.B.A.)
GND
TUNING CONTROL
FM TRNSMITTER CS(H)
FM TRANSMITTER ON(L)
FM MONO(H)
FM STEREO(L)
FM TRANSMITTER MONO(L)
P4207 (TO MAIN C.B.A.)
LINE1 AUDIO L CH
LINE1 AUDIO R CH
LINE2 AUDIO L CH
LINE2 AUDIO R CH
SW-5.1V
P4206 (TO MAIN C.B.A.)
TUNER2 AUDIO
TUNER2 MONO(H)/STEREO(L)
TUNER2 MTS(H)/SAP(L)
TUNER2 AUDIO DEFEAT(H)
TUNER2 SAP SIGNAL(L)
TUNER2 MTS SIGNAL(L)
P4205 (TO MAIN C.B.A.)
V CHIP MUTE(H)
SW+9V
TUNER1 SAP SIGNAL(L)
TUNER1 MTS SIGNAL(L)
TUNER1 MONO(H)/STEREO(L)
TUNER1 MTS(H)/SAP(L)
TUNER1 AUDIO DEFEAT(H)
TUNER1 AUDIO
C9202 47/6.3V
C9201 0.01

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

VOLTAGE CHART

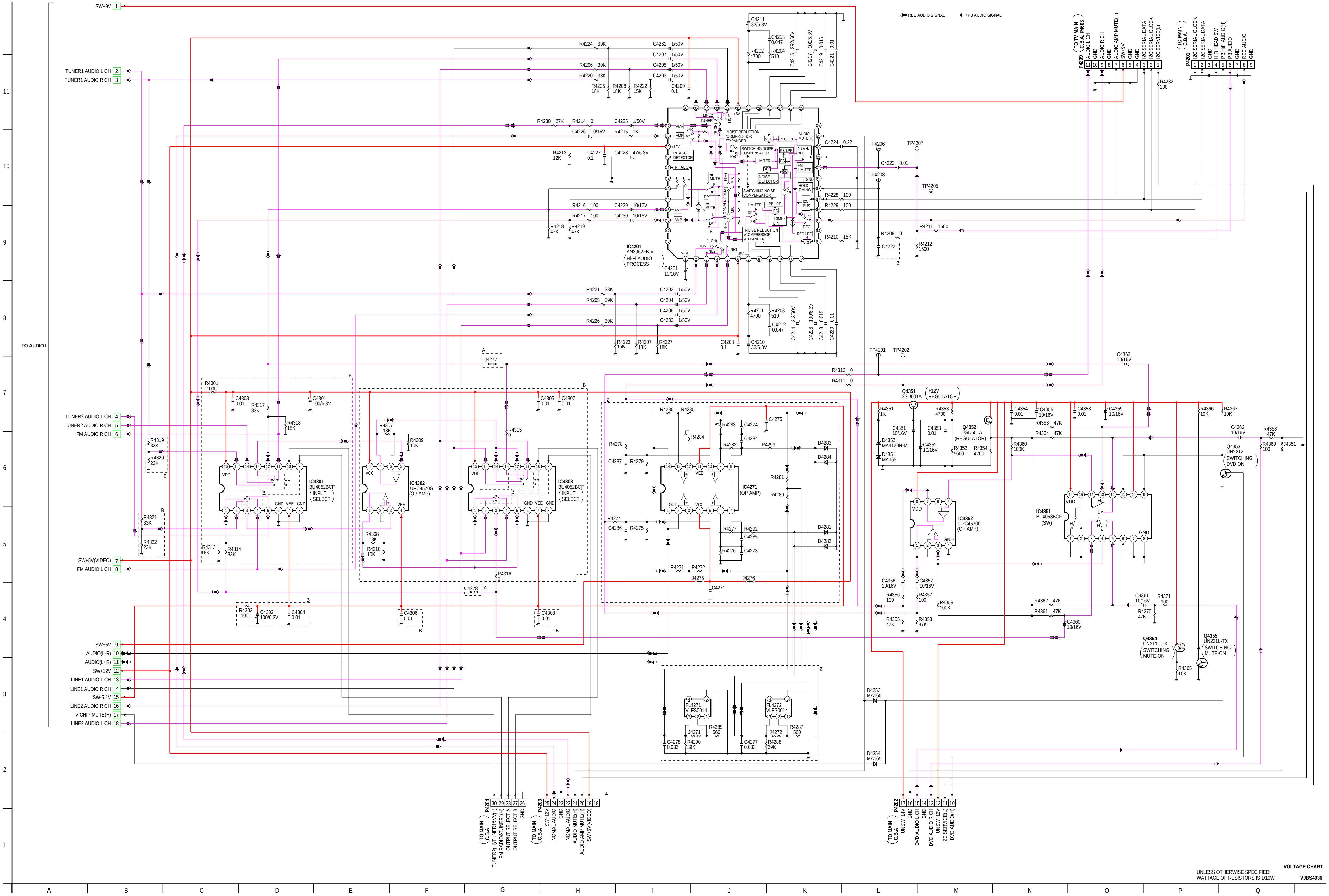
VJBS4036

AUDIO II SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z


REC AUDIO SIGNAL
PB AUDIO SIGNAL
TO AUDIO I
SW+9V 1
TUNER1 AUDIO L CH 2
TUNER1 AUDIO R CH 3
TUNER2 AUDIO L CH 4
TUNER2 AUDIO R CH 5
FM AUDIO R CH 6
SW+5V(VIDEO) 7
FM AUDIO L CH 8
SW+5V 9
AUDIO(L-R) 10
AUDIO(L+R) 11
SW+12V 12
LINE1 AUDIO L CH 13
LINE1 AUDIO R CH 14
SW-5.1V 15
LINE2 AUDIO R CH 16
V CHIP MUTE(H) 17
LINE2 AUDIO L CH 18
IC4201 AN3962FB-V (Hi-Fi AUDIO PROCESS)
NOISE REDUCTION /COMPRESSOR /EXPANDER
SWITCHING NOISE COMPENSATOR
LIMITER
NOISE DETECTOR
HOLD TIMING
RF AGC DETECTOR
RF AGC
AUDIO MUTE(H)
REC LPF
PB LPF
1.7MHz BPF
1.3MHz BPF
FM LIMITER
I2C BUS
TUNER
LINE1
LINE2
V-REF
MUTE
IC4301 BU4052BCF (INPUT SELECT)
IC4302 UPC4570G (OP AMP)
IC4303 BU4052BCF (INPUT SELECT)
IC4271 (OP AMP)
IC4351 BU4053BCF (SW)
IC4352 UPC4570G (OP AMP)
Q4351 2SD601A (+12V REGULATOR)
Q4352 2SD601A (REGULATOR)
Q4353 UN2212 SWITCHING DVD ON
Q4354 UN211L-TX SWITCHING MUTE-ON
Q4355 UN221L-TX SWITCHING MUTE-ON
D4352 MA4120N-M
D4351 MA165
D4353 MA165
D4354 MA165
FL4271 VLFS0014
FL4272 VLFS0014
J4351
TP4201
TP4202
TP4205
TP4206
TP4207
TP4208
P4209 (TO TV MAIN C.B.A. P4603)
AUDIO L CH
GND
AUDIO R CH
GND
AUDIO AMP MUTE(H)
SW+9V
GND
GND
I2C SERIAL DATA
I2C SERIAL CLOCK
I2C SERVICE(L)
P4201 (TO MAIN C.B.A.)
I2C SERIAL CLOCK
I2C SERIAL DATA
GND
HIFI HEAD SW
PB HIFI AUDIO(H)
PB AUDIO
GND
REC AUDIO
GND
P4204 (TO MAIN C.B.A.)
TUNER2(H)/TUNER1&V(L)
FM RADIO/TUNER1(H)
OUTPUT SELECT A
OUTPUT SELECT B
GND
P4203 (TO MAIN C.B.A.)
SW+12V
NOMAL AUDIO
GND
NOMAL AUDIO
AUDIO MUTE(H)
AUDIO AMP MUTE(H)
SW+5V(VIDEO)
P4202 (TO MAIN C.B.A.)
UNSW+14V
GND
DVD AUDIO L CH
GND
DVD AUDIO R CH
UNSW+12V
I2C SERVICE(L)
DVD AUDIO(H)
A B C D E F G H I J K L M N O P Q
1 2 3 4 5 6 7 8 9 10 11

VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

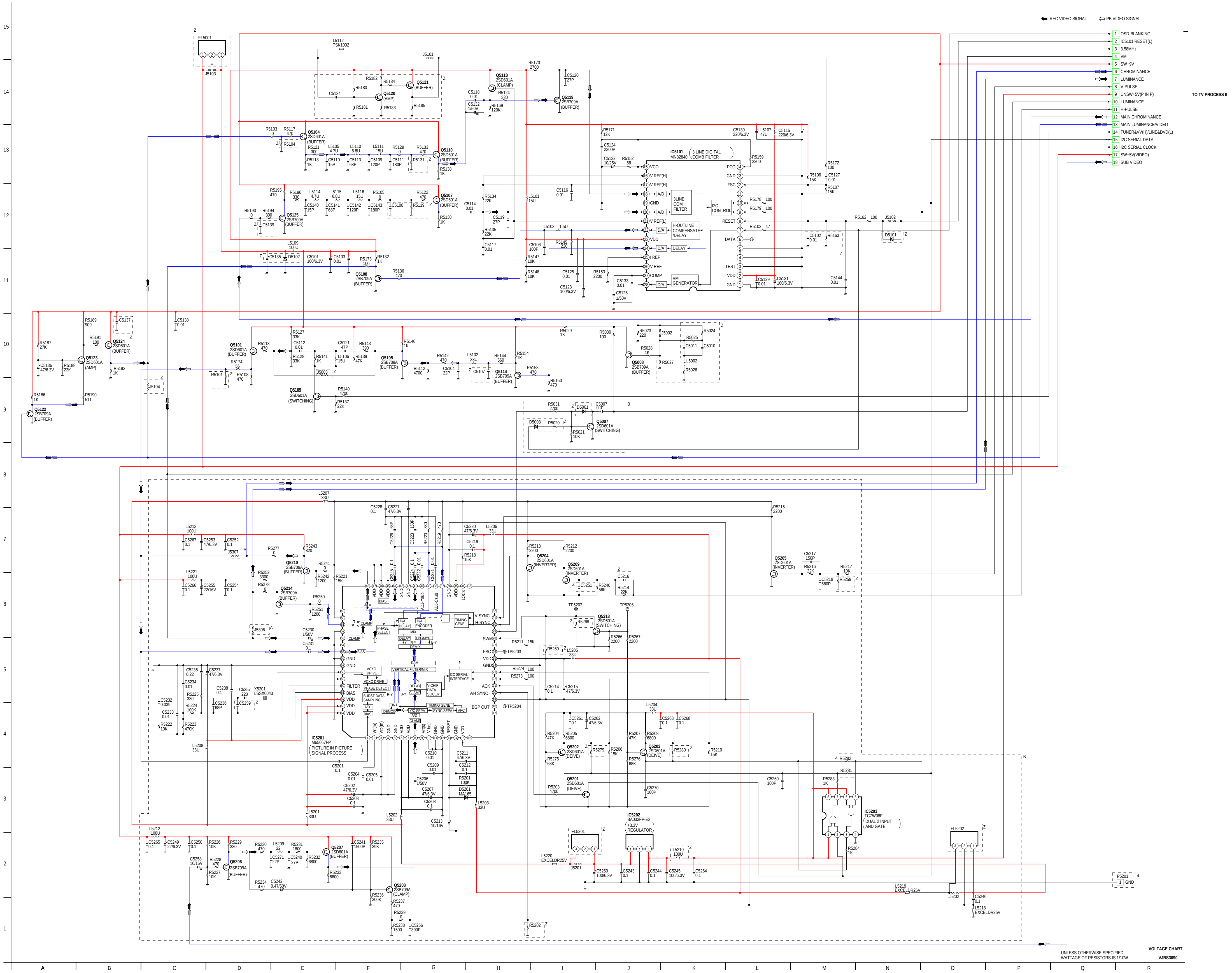
VJBS4036

TV PROCESS I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



REC VIDEO SIGNAL
PB VIDEO SIGNAL
1 OSD-BLANKING
2 IC5101 RESET(L)
3 3.58MHz
4 VM
5 SW+9V
6 CHROMINANCE
7 LUMINANCE
8 V-PULSE
9 UNSW+5V(P IN P)
10 LUMINANCE
11 H-PULSE
12 MAIN CHROMINANCE
13 MAIN LUMINANCE/VIDEO
14 TUNER&VV(H)/LINE&DVD(L)
15 I2C SERIAL DATA
16 I2C SERIAL CLOCK
17 SW+5V(VIDEO)
18 SUB VIDEO
TO TV PROCESS II
IC5101 MN82840 (3 LINE DIGITAL COMB FILTER)
IC5201 M65667FP (PICTURE IN PICTURE SIGNAL PROCESS)
IC5202 BA033FP-E2 (+3.3V REGULATOR)
IC5203 TC7W08F (DUAL 2 INPUT AND GATE)
FL5001
FL5201
FL5202
X5201 LSSX0043
P5201
A
B
C
D
E
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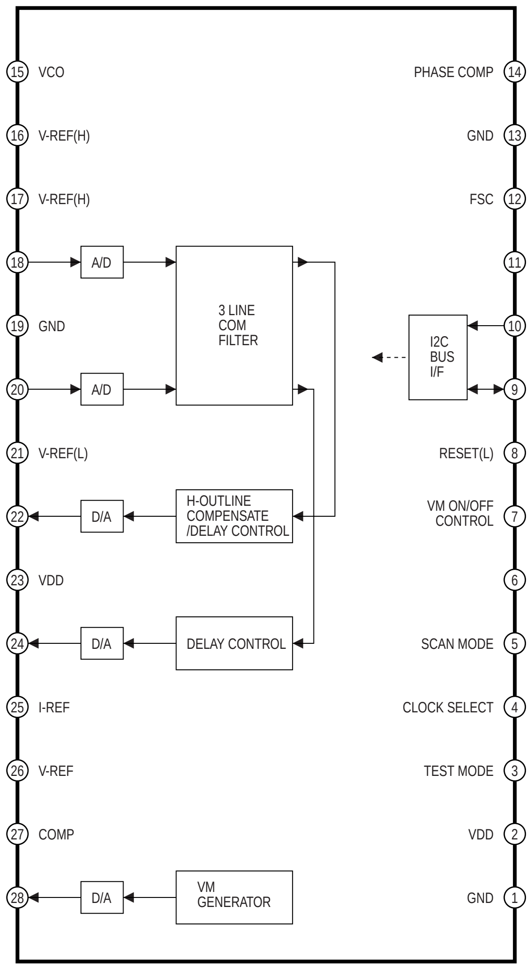
UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

VOLTAGE CHART

VJBS3090

IC5101 3LINR DEGI COM DETAIL BLOCK DIAGRAM



15 VCO
16 V-REF(H)
17 V-REF(H)
18
19 GND
20
21 V-REF(L)
22
23 VDD
24
25 I-REF
26 V-REF
27 COMP
28
A/D
A/D
D/A
D/A
D/A
3 LINE COM FILTER
H-OUTLINE COMPENSATE /DELAY CONTROL
DELAY CONTROL
VM GENERATOR
I2C BUS I/F
PHASE COMP 14
GND 13
FSC 12
11
10
9
RESET(L) 8
VM ON/OFF CONTROL 7
6
SCAN MODE 5
CLOCK SELECT 4
TEST MODE 3
VDD 2
GND 1

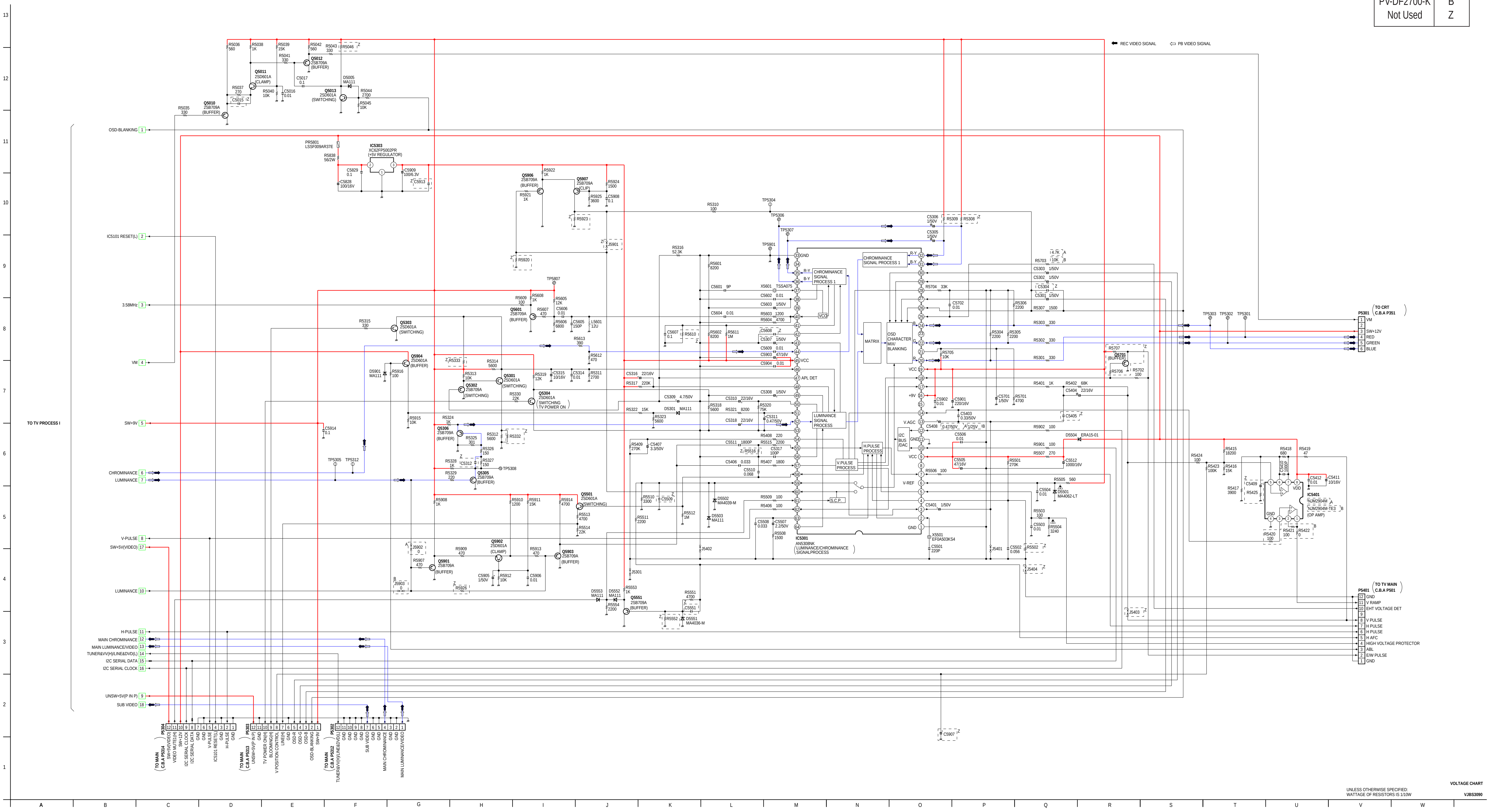
TV PROCESS II SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



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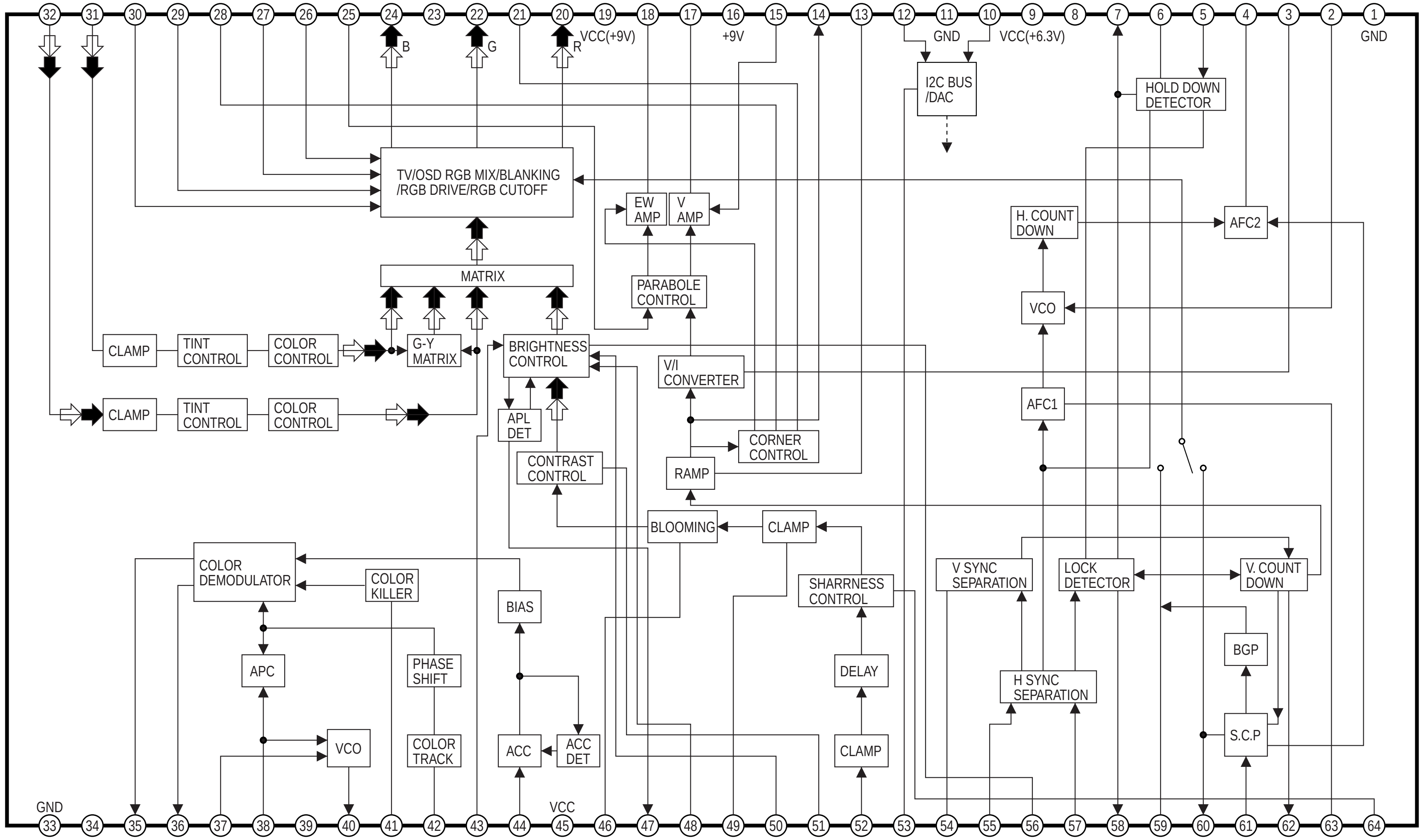
S
T
U
V
W
REC VIDEO SIGNAL
PB VIDEO SIGNAL
TO TV PROCESS I
OSD-BLANKING 1
IC5101 RESET(L) 2
3.58MHz 3
VM 4
SW+9V 5
CHROMINANCE 6
LUMINANCE 7
V-PULSE 8
SW+5V(VIDEO) 17
LUMINANCE 10
H-PULSE 11
MAIN CHROMINANCE 12
MAIN LUMINANCE/VIDEO 13
TUNER&VV(H)/LINE&DVD(L) 14
I2C SERIAL DATA 15
I2C SERIAL CLOCK 16
UNSW+5V(P IN P) 9
SUB VIDEO 18
Q5010 2SB709A (BUFFER)
Q5011 2SD601A (CLAMP)
Q5012 2SB709A (BUFFER)
Q5013 2SD601A (SWITCHING)
D5005 MA111
PR5801 LSSF009AR37E
IC5303 XC62FP5002PR (+5V REGULATOR)
Q5906 2SB709A (BUFFER)
Q5907 2SB709A (CLIP)
Q5601 2SB709A (BUFFER)
Q5303 2SD601A (SWITCHING)
Q5904 2SD601A (BUFFER)
D5901 MA111
Q5302 2SB709A (SWITCHING)
Q5301 2SD601A (SWITCHING)
Q5304 2SD601A (SWITCHING TV POWER ON)
Q5306 2SB709A (BUFFER)
Q5305 2SB709A (BUFFER)
Q5501 2SD601A (SWITCHING)
Q5901 2SB709A (BUFFER)
Q5902 2SD601A (CLAMP)
Q5903 2SB709A (BUFFER)
Q5551 2SB709A (BUFFER)
D5553 MA111
D5552 MA111
D5551 MA4036-M
D5502 MA4039-M
D5503 MA111
D5301 MA111
X5601 TSSA075
X5501 EF0A503KS4
IC5301 AN5308NK (LUMINANCE/CHROMINANCE SIGNAL PROCESS)
CHROMINANCE SIGNAL PROCESS 1
CHROMINANCE SIGNAL PROCESS 2
LUMINANCE SIGNAL PROCESS
MATRIX
OSD CHARACTER MIX/ BLANKING
VCO
H.PULSE PROCESS
V.PULSE PROCESS
I2C BUS /DAC
S.C.P.
APL DET
V.AGC
V-REF
Q5701 (BUFFER)
D5504 ERA15-01
D5501 MA4062-LT
IC5401 NJM2904M (OP AMP)
TP5303 TP5302 TP5301
P5301 TO CRT C.B.A P351
1 VM
2
3 SW+12V
4 RED
5 GREEN
6 BLUE
P5401 TO TV MAIN C.B.A P501
12 GND
11 V RAMP
10 EHT VOLTAGE DET
9
8 V PULSE
7 H PULSE
6 H PULSE
5 H AFC
4 HIGH VOLTAGE PROTECTOR
3 ABL
2 E/W PULSE
1 GND
P5304 TO MAIN C.B.A P5314
SW+5V(VIDEO)
VIDEO MUTE(H)
SW+12V
I2C SERIAL CLOCK
I2C SERIAL DATA
GND
V-PULSE
GND
IC5101 RESET(L)
GND
H-PULSE
GND
P5303 TO MAIN C.B.A P5313
UNSW+5V(P IN P)
GND
TV POWER ON(H)
BLOOMING(H)
V POSITION CONTROL
LINE(H)
GND
OSD-G
OSD-R
OSD-B
OSD-BLANKING
SW+9V
P5302 TO MAIN C.B.A P5312
TUNER&VV(H)/LINE&DVD(L)
GND
GND
GND
SUB VIDEO
GND
GND
MAIN CHROMINANCE
GND
MAIN LUMINANCE/VIDEO

VOLTAGE CHART

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

VJBS3090

IC5301 LUMINANCE/CHROMINANCE SIGNAL PROCESS IC-DETAIL BLOCK DIAGRAM, AN5308NK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1
B
G
R
VCC(+9V)
+9V
GND
VCC(+6.3V)
GND
I2C BUS
/DAC
HOLD DOWN
DETECTOR
TV/OSD RGB MIX/BLANKING
/RGB DRIVE/RGB CUTOFF
EW
AMP
V
AMP
H. COUNT
DOWN
AFC2
MATRIX
PARABOLE
CONTROL
VCO
CLAMP
TINT
CONTROL
COLOR
CONTROL
G-Y
MATRIX
BRIGHTNESS
CONTROL
V/I
CONVERTER
CLAMP
TINT
CONTROL
COLOR
CONTROL
APL
DET
AFC1
CORNER
CONTROL
CONTRAST
CONTROL
RAMP
BLOOMING
CLAMP
COLOR
DEMODULATOR
COLOR
KILLER
SHARRNESS
CONTROL
V SYNC
SEPARATION
LOCK
DETECTOR
V. COUNT
DOWN
BIAS
APC
PHASE
SHIFT
DELAY
BGP
H SYNC
SEPARATION
VCO
COLOR
TRACK
ACC
ACC
DET
CLAMP
S.C.P
GND
VCC
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POWER SUPPLY SCHEMATIC DIAGRAM

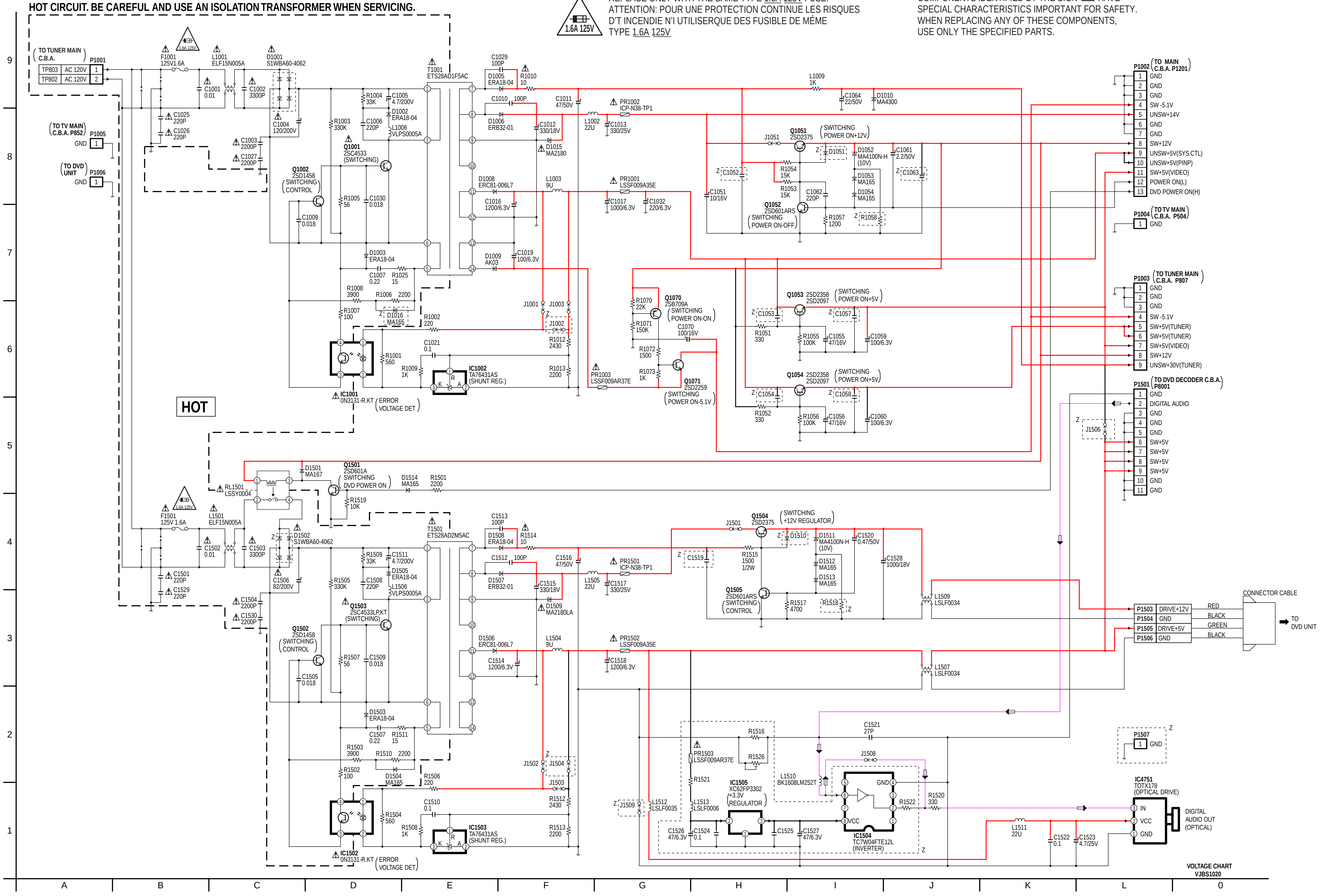
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z

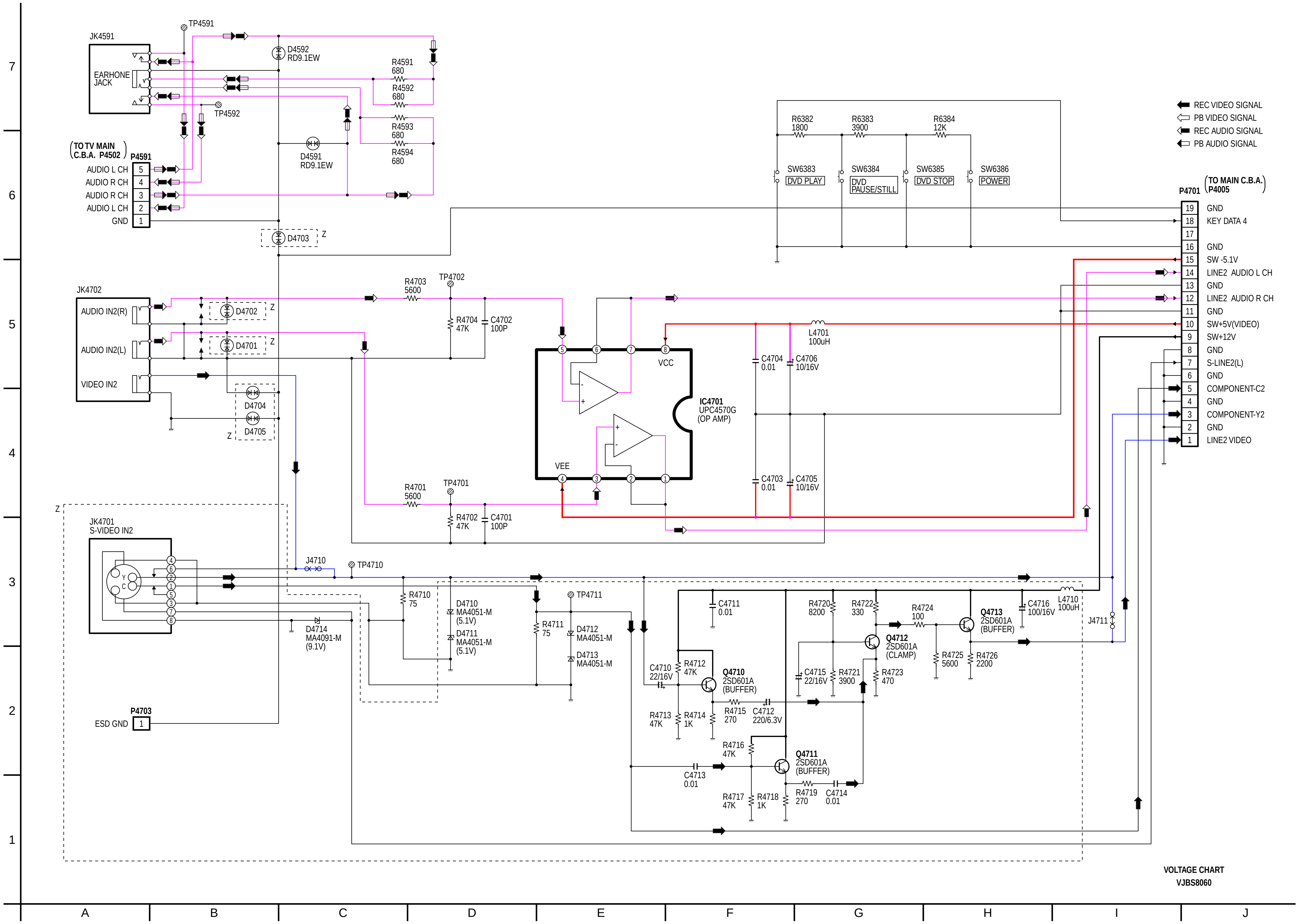

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.
HOT
TO TUNER MAIN C.B.A.
P1001
TP803 AC 120V 1
TP802 AC 120V 2
TO TV MAIN C.B.A. P852
P1005
GND 1
TO DVD UNIT
P1006
GND 1
F1001 125V1.6A
1.6A 125V
L1001 ELF15N005A
D1001 S1WBA60-4062
C1001 0.01
C1002 3300P
C1025 220P
C1026 220P
C1003 2200P
C1027 2200P
C1004 120/200V
T1001 ETS28AD1F5AC
R1004 33K
C1005 4.7/200V
D1002 ERA18-04
R1003 330K
C1006 220P
L1006 VLPS0005A
Q1001 2SC4533 (SWITCHING)
Q1002 2SD1458 (SWITCHING CONTROL)
R1005 56
C1030 0.018
C1009 0.018
D1003 ERA18-04
C1007 0.22
R1025 15
R1008 3900
R1006 2200
R1007 100
D1016 MA165
R1002 220
C1021 0.1
R1001 560
R1009 1K
IC1002 TA76431AS (SHUNT REG.)
IC1001 ON3131-R.KT (ERROR VOLTAGE DET)
C1029 100P
D1005 ERA18-04
R1010 10
C1010 100P
C1011 47/50V
D1006 ERB32-01
C1012 330/18V
D1015 MA2180
L1002 22U
C1013 330/25V
PR1002 ICP-N38-TP1
D1008 ERC81-006L7
L1003 9U
C1016 1200/6.3V
PR1001 LSSF009A35E
C1017 1000/6.3V
C1032 220/6.3V
D1009 AK03
C1019 100/6.3V
J1001 J1003 J1002
R1012 2430
R1013 2200
PR1003 LSSF009AR37E
L1009 1K
C1064 22/50V
D1010 MA4300
J1051
Q1051 2SD2375 (SWITCHING POWER ON+12V)
D1051
D1052 MA4100N-H (10V)
C1061 2.2/50V
C1052
C1063
R1054 15K
D1053 MA165
R1053 15K
C1062 220P
D1054 MA165
C1051 10/16V
Q1052 2SD601ARS (SWITCHING POWER ON-OFF)
R1057 1200
R1058
R1070 22K
Q1070 2SB709A (SWITCHING POWER ON-ON)
R1071 150K
C1070 100/16V
R1072 1500
R1073 1K
Q1071 2SD2259 (SWITCHING POWER ON-5.1V)
Q1053 2SD2358 2SD2097 (SWITCHING POWER ON+5V)
C1053 C1057
R1051 330
R1055 100K
C1055 47/16V
C1059 100/6.3V
Q1054 2SD2358 2SD2097 (SWITCHING POWER ON+5V)
C1054 C1058
R1052 330
R1056 100K
C1056 47/16V
C1060 100/6.3V
P1002 (TO MAIN C.B.A. P1201)
1 GND
2 GND
3 GND
4 SW -5.1V
5 UNSW+14V
6 GND
7 GND
8 SW+12V
9 UNSW+5V(SYS.CTL)
10 UNSW+5V(PINP)
11 SW+5V(VIDEO)
12 POWER ON(L)
13 DVD POWER ON(H)
P1004 (TO TV MAIN C.B.A. P504)
1 GND
P1003 (TO TUNER MAIN C.B.A. P807)
1 GND
2 GND
3 GND
4 SW -5.1V
5 SW+5V(TUNER)
6 SW+5V(TUNER)
7 SW+5V(VIDEO)
8 SW+12V
9 UNSW+30V(TUNER)
P1501 (TO DVD DECODER C.B.A. P8001)
1 GND
2 DIGITAL AUDIO
3 GND
4 GND
5 GND
6 SW+5V
7 SW+5V
8 SW+5V
9 SW+5V
10 GND
11 GND
J1506
RL1501 LSSY0004
D1501 MA167
Q1501 2SD601A (SWITCHING DVD POWER ON)
D1514 MA165
R1501 2200
R1519 10K
F1501 125V 1.6A
L1501 ELF15N005A
D1502 S1WBA60-4062
C1502 0.01
C1503 3300P
C1501 220P
C1529 220P
C1504 2200P
C1530 2200P
C1506 82/200V
T1501 ETS28AD2M5AC
R1509 33K
C1511 4.7/200V
D1505 ERA18-04
R1505 330K
C1508 220P
L1506 VLPS0005A
Q1503 2SC4533LP.KT (SWITCHING)
Q1502 2SD1458 (SWITCHING CONTROL)
R1507 56
C1509 0.018
C1505 0.018
D1503 ERA18-04
C1507 0.22
R1511 15
R1503 3900
R1510 2200
R1502 100
D1504 MA165
R1506 220
C1510 0.1
R1504 560
R1508 1K
IC1503 TA76431AS (SHUNT REG.)
IC1502 ON3131-R.KT (ERROR VOLTAGE DET)
C1513 100P
D1508 ERA18-04
R1514 10
C1512 100P
C1516 47/50V
D1507 ERB32-01
C1515 330/18V
D1509 MA2180LA
L1505 22U
C1517 330/25V
PR1501 ICP-N38-TP1
D1506 ERC81-006L7
L1504 9U
C1514 1200/6.3V
PR1502 LSSF009A35E
C1518 1200/6.3V
J1502 J1504 J1503
R1512 2430
R1513 2200
J1501
Q1504 2SD2375 (SWITCHING +12V REGULATOR)
D1510
D1511 MA4100N-H (10V)
C1520 0.47/50V
C1519
R1515 1500 1/2W
D1512 MA165
C1528 1000/18V
D1513 MA165
Q1505 2SD601ARS (SWITCHING CONTROL)
R1517 4700
R1518
L1509 LSLF0034
L1507 LSLF0034
P1503 DRIVE+12V
P1504 GND
P1505 DRIVE+5V
P1506 GND
RED
BLACK
GREEN
BLACK
CONNECTOR CABLE
TO DVD UNIT
R1516
C1521 27P
PR1503 LSSF009AR37E
R1526
J1508
R1521
L1510 BK1608LM252T
IC1505 XC62FP3302 (+3.3V REGULATOR)
GND
VCC
R1522
R1520 330
J1509
L1512 LSLF0035
L1513 LSLF0006
C1526 47/6.3V
C1524 0.1
C1525
C1527 47/6.3V
IC1504 TC7W04FTE12L (INVERTER)
P1507
1 GND
IC4751 TOTX178 (OPTICAL DRIVE)
IN
VCC
GND
DIGITAL AUDIO OUT (OPTICAL)
L1511 22U
C1522 0.1
C1523 4.7/25V
VOLTAGE CHART VJBS1020
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L
0

OPERATION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
JK4591
EARHONE JACK
TP4591
TP4592
D4592 RD9.1EW
D4591 RD9.1EW
R4591 680
R4592 680
R4593 680
R4594 680
TO TV MAIN C.B.A. P4502
P4591
AUDIO L CH 5
AUDIO R CH 4
AUDIO R CH 3
AUDIO L CH 2
GND 1
D4703 Z
JK4702
AUDIO IN2(R)
AUDIO IN2(L)
VIDEO IN2
D4702 Z
D4701 Z
D4704
D4705
Z
R4703 5600
TP4702
R4704 47K
C4702 100P
R4701 5600
TP4701
R4702 47K
C4701 100P
IC4701 UPC4570G (OP AMP)
VCC
VEE
L4701 100uH
C4704 0.01
C4706 10/16V
C4703 0.01
C4705 10/16V
R6382 1800
R6383 3900
R6384 12K
SW6383 DVD PLAY
SW6384 DVD PAUSE/STILL
SW6385 DVD STOP
SW6386 POWER
TO MAIN C.B.A. P4005
P4701
19 GND
18 KEY DATA 4
17
16 GND
15 SW -5.1V
14 LINE2 AUDIO L CH
13 GND
12 LINE2 AUDIO R CH
11 GND
10 SW+5V(VIDEO)
9 SW+12V
8 GND
7 S-LINE2(L)
6 GND
5 COMPONENT-C2
4 GND
3 COMPONENT-Y2
2 GND
1 LINE2 VIDEO
Z
JK4701 S-VIDEO IN2
Y
C
J4710
TP4710
TP4711
R4710 75
D4710 MA4051-M (5.1V)
D4711 MA4051-M (5.1V)
D4714 MA4091-M (9.1V)
R4711 75
D4712 MA4051-M
D4713 MA4051-M
C4711 0.01
C4710 22/16V
R4712 47K
Q4710 2SD601A (BUFFER)
R4713 47K
R4714 1K
R4715 270
C4712 220/6.3V
R4716 47K
C4713 0.01
Q4711 2SD601A (BUFFER)
R4717 47K
R4718 1K
R4719 270
C4714 0.01
R4720 8200
R4722 330
C4715 22/16V
R4721 3900
R4723 470
Q4712 2SD601A (CLAMP)
R4724 100
Q4713 2SD601A (BUFFER)
R4725 5600
R4726 2200
C4716 100/16V
L4710 100uH
J4711
P4703
ESD GND 1
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J

VOLTAGE CHART
VJBS8060

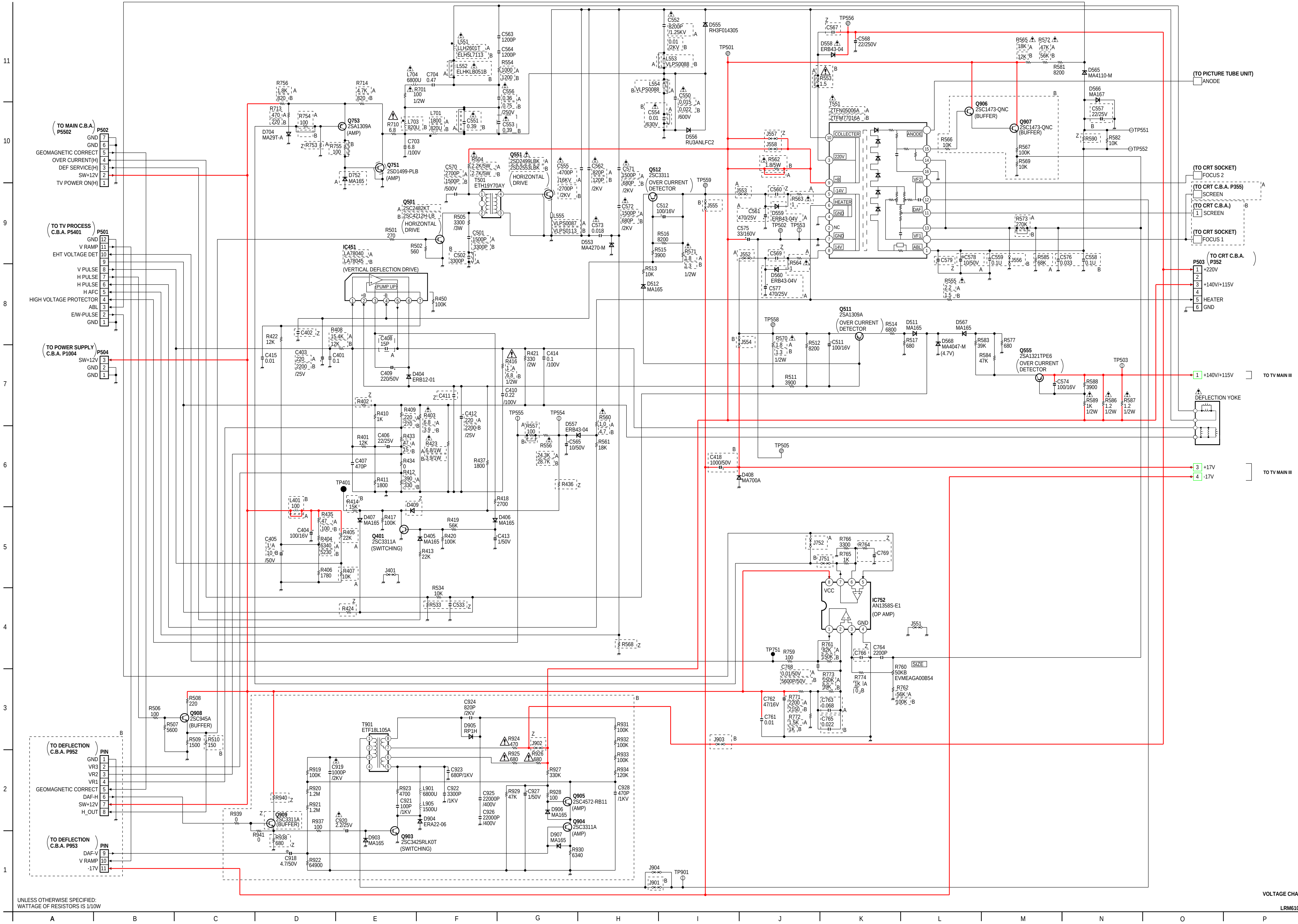
TV MAIN I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.


TO MAIN C.B.A. P5502
P502
GND
GND
GEOMAGNETIC CORRECT
OVER CURRENT(H)
DEF SERVICE(H)
SW+12V
TV POWER ON(H)
TO TV PROCESS C.B.A. P5401
P501
GND
V RAMP
EHT VOLTAGE DET
V PULSE
H PULSE
H PULSE
H AFC
HIGH VOLTAGE PROTECTOR
ABL
E/W-PULSE
GND
TO POWER SUPPLY C.B.A. P1004
P504
SW+12V
GND
GND
TO DEFLECTION C.B.A. P952
PIN
GND
VR3
VR2
VR1
GEOMAGNETIC CORRECT
DAF-H
SW+12V
H_OUT
TO DEFLECTION C.B.A. P953
PIN
DAF-V
V RAMP
-17V
Q753 2SA1309A (AMP)
Q751 2SD1499-PLB (AMP)
Q501 2SC2482KT / 2SC4212H-LB HORIZONTAL DRIVE
Q551 2SD2499LBK / 2SD2553LBK HORIZONTAL DRIVE
T501 ETH19Y70AY
Q512 2SC3311 (OVER CURRENT DETECTOR)
IC451 LA78040 / LA78045 (VERTICAL DEFLECTION DRIVE)
PUMP UP
T551 ZTFN05006A / ZTFM77016A
COLLECTOR
ANODE
HEATER
GND
NC
ABL
Q906 2SC1473-QNC (BUFFER)
Q907 2SC1473-QNC (BUFFER)
Q511 2SA1309A (OVER CURRENT DETECTOR)
Q555 2SA1321TPE6 (OVER CURRENT DETECTOR)
Q401 2SC3311A (SWITCHING)
IC752 AN1358S-E1 (OP AMP)
VCC
GND
SIZE
Q908 2SC945A (BUFFER)
T901 ETF18L105A
Q909 2SC3311A (BUFFER)
Q903 2SC3425RLK0T (SWITCHING)
Q905 2SC4572-RB11 (AMP)
Q904 2SC3311A (AMP)
(TO PICTURE TUBE UNIT) ANODE
(TO CRT SOCKET) FOCUS 2
(TO CRT C.B.A. P355) SCREEN
(TO CRT C.B.A.) SCREEN
(TO CRT SOCKET) FOCUS 1
P503 TO CRT C.B.A. P352
+220V
+140V/+115V
HEATER
GND
+140V/+115V
TO TV MAIN III
DEFLECTION YOKE
+17V
-17V
TO TV MAIN III
TP501
TP502
TP503
TP505
TP551
TP552
TP554
TP555
TP556
TP558
TP559
TP401
TP751
TP901
A B C D E F G H I J K L M N O P
1 2 3 4 5 6 7 8 9 10 11

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

VOLTAGE CHART

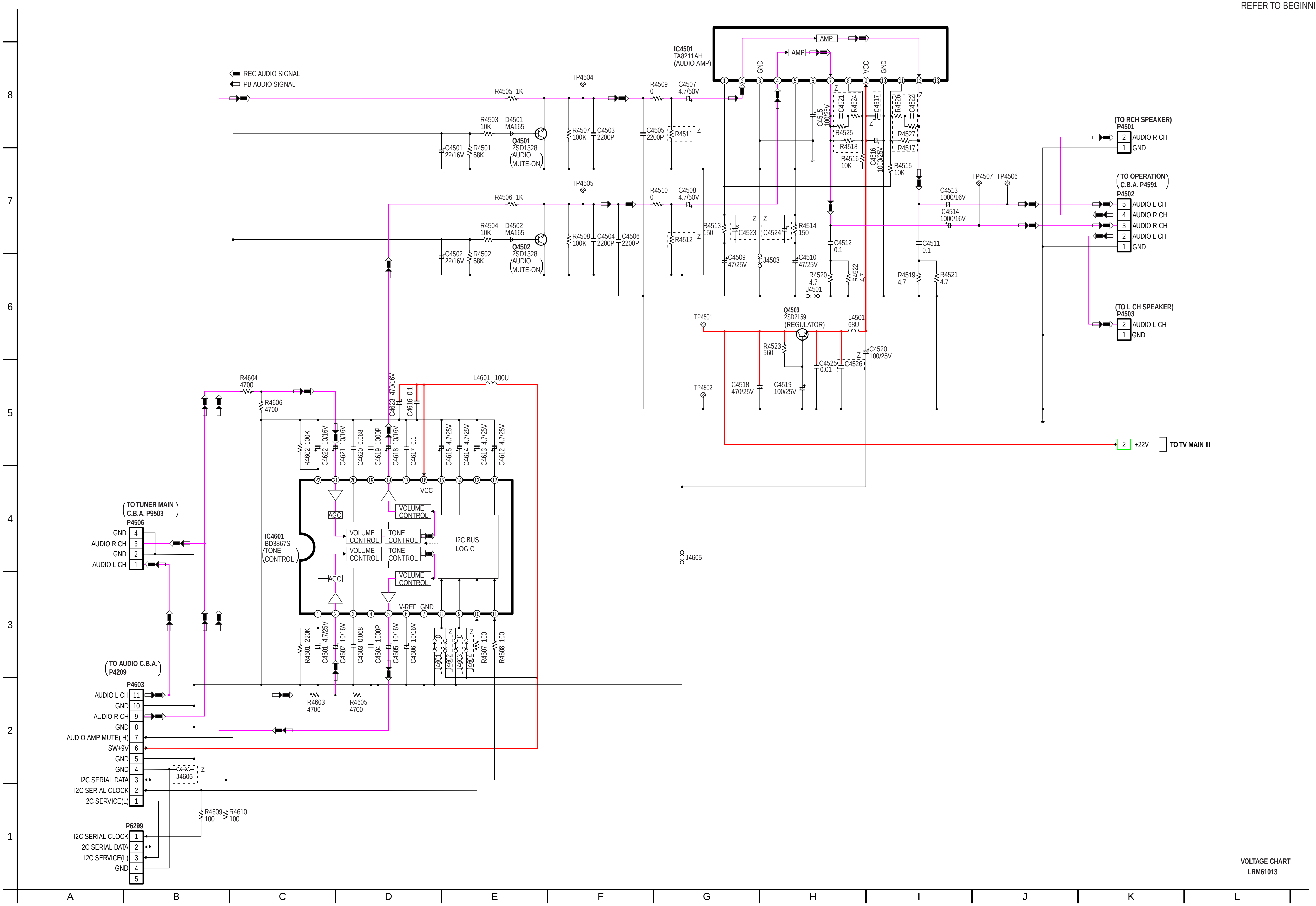
LRM61013

TV MAIN II SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC4501 TA8211AH (AUDIO AMP)
AMP
GND
VCC
TP4504
TP4505
R4505 1K
R4506 1K
R4503 10K
R4504 10K
D4501 MA165
D4502 MA165
Q4501 2SD1328 (AUDIO MUTE-ON)
Q4502 2SD1328 (AUDIO MUTE-ON)
C4501 22/16V
C4502 22/16V
R4501 68K
R4502 68K
R4507 100K
R4508 100K
C4503 2200P
C4504 2200P
C4505 2200P
C4506 2200P
R4509 0
R4510 0
C4507 4.7/50V
C4508 4.7/50V
R4511
R4512
R4513 150
R4514 150
C4523
C4524
C4509 47/25V
C4510 47/25V
J4503
C4515 100/25V
C4521
R4524
R4525
R4518
R4516 10K
C4516 1000/25V
C4517
R4526
C4522
R4527
R4517
R4515 10K
C4512 0.1
C4511 0.1
R4520 4.7
R4522 4.7
R4519 4.7
R4521 4.7
J4501
TP4507
TP4506
C4513 1000/16V
C4514 1000/16V
(TO RCH SPEAKER) P4501
AUDIO R CH
GND
(TO OPERATION C.B.A. P4591) P4502
AUDIO L CH
AUDIO R CH
AUDIO R CH
AUDIO L CH
GND
(TO L CH SPEAKER) P4503
AUDIO L CH
GND
TP4501
Q4503 2SD2159 (REGULATOR)
L4501 68U
R4523 560
C4525 0.01
C4526
C4520 100/25V
TP4502
C4518 470/25V
C4519 100/25V
+22V
TO TV MAIN III
R4604 4700
R4606 4700
L4601 100U
C4623 470/16V
C4616 0.1
R4602 100K
C4622 10/16V
C4621 10/16V
C4620 0.068
C4619 1000P
C4618 10/16V
C4617 0.1
C4615 4.7/25V
C4614 4.7/25V
C4613 4.7/25V
C4612 4.7/25V
VCC
AGC
VOLUME CONTROL
TONE CONTROL
I2C BUS LOGIC
IC4601 BD3867S (TONE CONTROL)
V-REF
GND
R4601 220K
C4601 4.7/25V
C4602 10/16V
C4603 0.068
C4604 1000P
C4605 10/16V
C4606 10/16V
J4601
J4602
J4603
J4604
R4607 100
R4608 100
J4605
R4603 4700
R4605 4700
(TO TUNER MAIN C.B.A. P9503) P4506
GND
AUDIO R CH
GND
AUDIO L CH
(TO AUDIO C.B.A. P4209) P4603
AUDIO L CH
GND
AUDIO R CH
GND
AUDIO AMP MUTE(H)
SW+9V
GND
GND
I2C SERIAL DATA
I2C SERIAL CLOCK
I2C SERVICE(L)
J4606
R4609 100
R4610 100
P6299
I2C SERIAL CLOCK
I2C SERIAL DATA
I2C SERVICE(L)
GND
A B C D E F G H I J K L
1 2 3 4 5 6 7 8

VOLTAGE CHART
LRM61013

TV MAIN III SCHEMATIC DIAGRAM

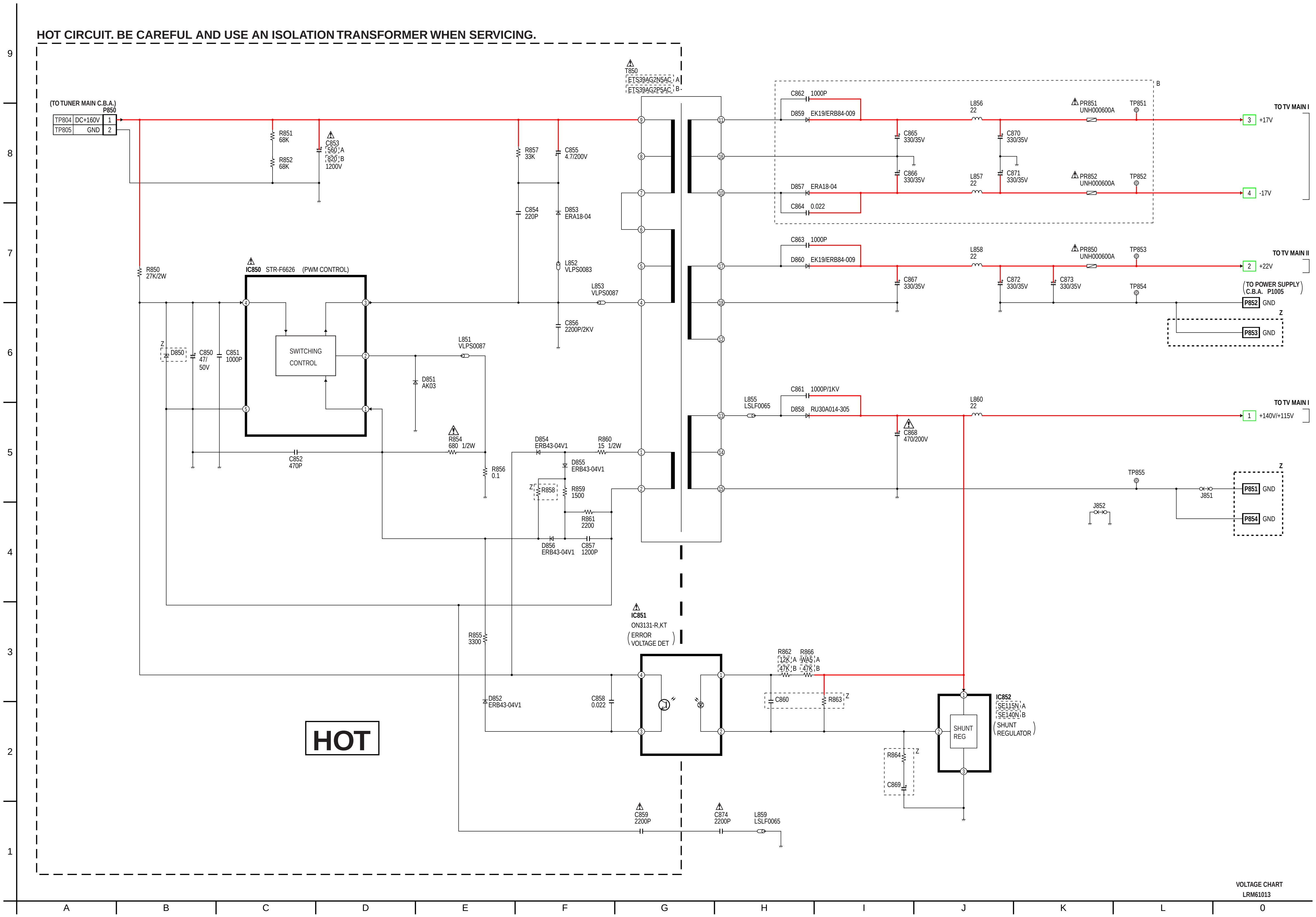
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



HOT
(TO TUNER MAIN C.B.A.)
P850
TP804 DC+160V 1
TP805 GND 2
R851 68K
R852 68K
C853 560 A 820 B 1200V
R857 33K
C855 4.7/200V
C854 220P
D853 ERA18-04
L852 VLPS0083
L853 VLPS0087
C856 2200P/2KV
T850 ETS39AG2N5AC A ETS39AG2P5AC B
R850 27K/2W
IC850 STR-F6626 (PWM CONTROL)
SWITCHING CONTROL
D850
C850 47/ 50V
C851 1000P
L851 VLPS0087
D851 AK03
C852 470P
R854 680 1/2W
R856 0.1
D854 ERB43-04V1
D855 ERB43-04V1
R860 15 1/2W
R858
R859 1500
R861 2200
D856 ERB43-04V1
C857 1200P
IC851 ON3131-R,KT (ERROR VOLTAGE DET)
R855 3300
D852 ERB43-04V1
C858 0.022
C859 2200P
C874 2200P
L859 LSLF0065
C862 1000P
D859 EK19/ERB84-009
L856 22
PR851 UNH000600A
TP851
C865 330/35V
C870 330/35V
C866 330/35V
C871 330/35V
D857 ERA18-04
L857 22
PR852 UNH000600A
TP852
C864 0.022
TO TV MAIN I
3 +17V
4 -17V
C863 1000P
D860 EK19/ERB84-009
L858 22
PR850 UNH000600A
TP853
TO TV MAIN II
2 +22V
C867 330/35V
C872 330/35V
C873 330/35V
TP854
(TO POWER SUPPLY C.B.A. P1005)
P852 GND
P853 GND
L855 LSLF0065
C861 1000P/1KV
D858 RU30A014-305
L860 22
TO TV MAIN I
1 +140V/+115V
C868 470/200V
TP855
J851
J852
P851 GND
P854 GND
R862 12K A 47K B
R866 WA5 A 47K B
C860
R863
IC852 SE115N A SE140N B (SHUNT REGULATOR)
SHUNT REG
R864
C869
A B C D E F G H I J K L 0
1 2 3 4 5 6 7 8 9

VOLTAGE CHART
LRM61013

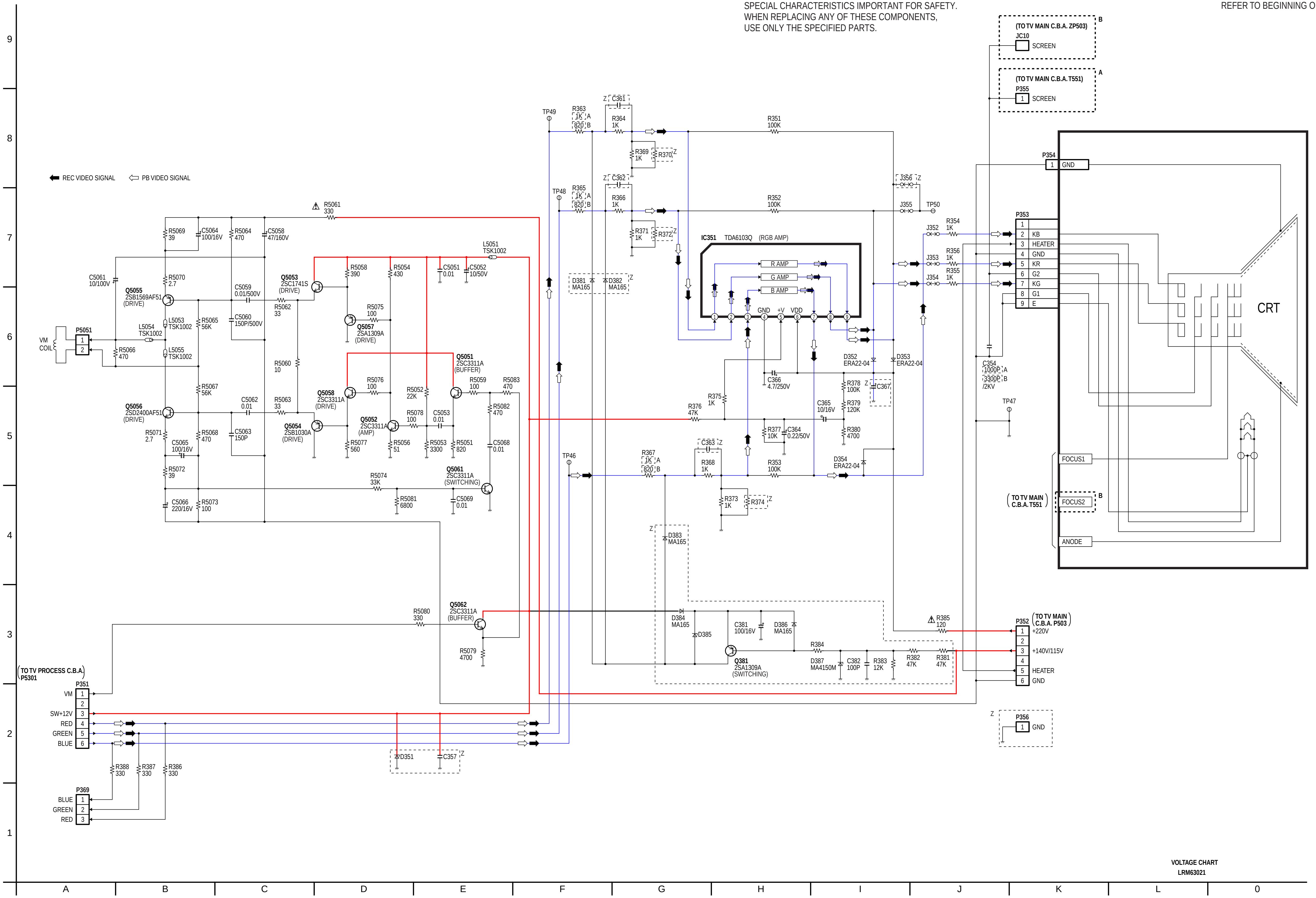
CRT SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



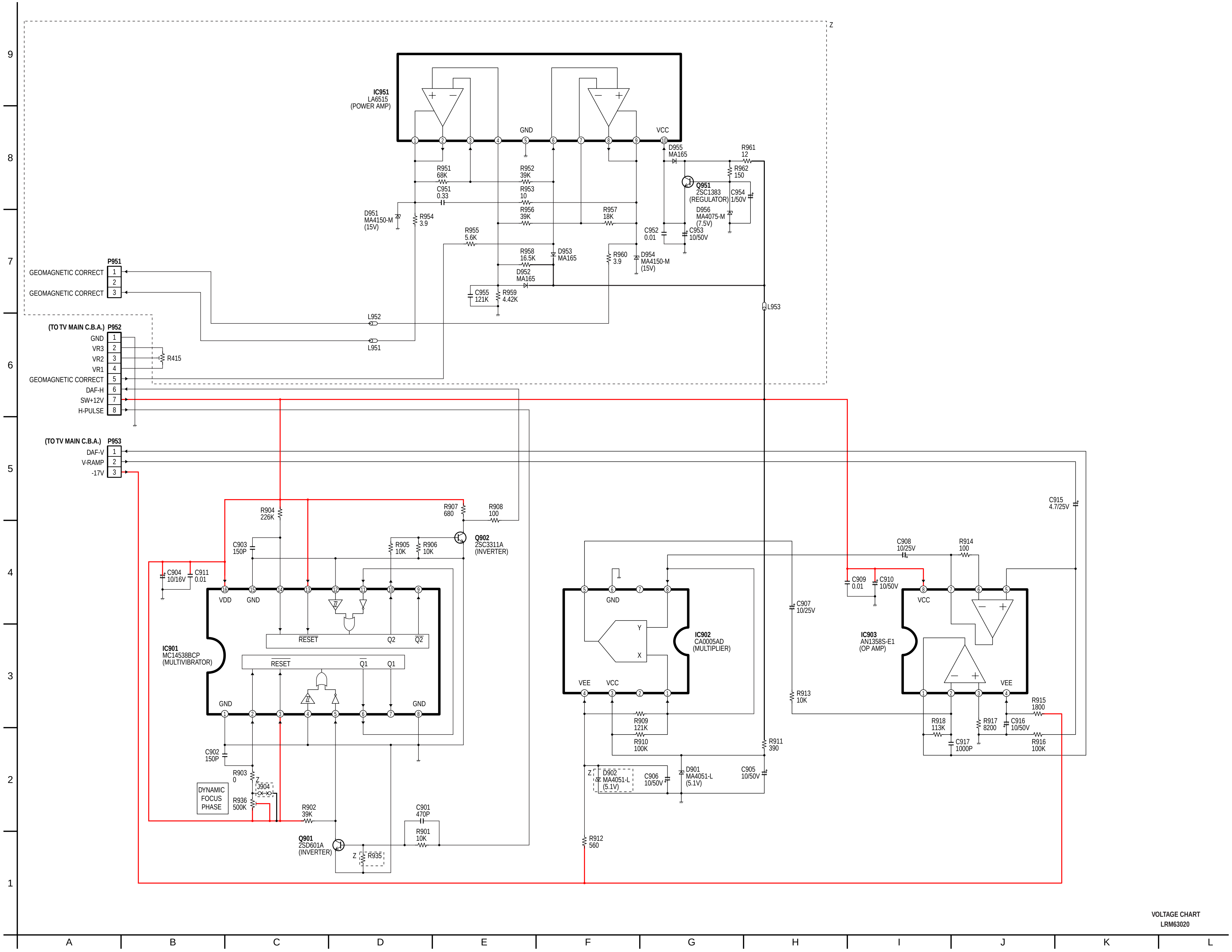
REC VIDEO SIGNAL
PB VIDEO SIGNAL
VM COIL
P5051
R5061 330
R5069 39
C5064 100/16V
R5064 470
C5058 47/160V
C5061 10/100V
R5070 2.7
Q5055 2SB1569AF51 (DRIVE)
C5059 0.01/500V
Q5053 2SC1741S (DRIVE)
R5058 390
R5054 430
C5051 0.01
C5052 10/50V
L5051 TSK1002
R5062 33
L5053 TSK1002
R5065 56K
C5060 150P/500V
L5054 TSK1002
R5066 470
L5055 TSK1002
R5075 100
Q5057 2SA1309A (DRIVE)
R5060 10
Q5051 2SC3311A (BUFFER)
R5067 56K
Q5056 2SD2400AF51 (DRIVE)
C5062 0.01
R5063 33
Q5058 2SC3311A (DRIVE)
R5076 100
R5052 22K
R5059 100
R5083 470
R5082 470
Q5054 2SB1030A (DRIVE)
Q5052 2SC3311A (AMP)
R5078 100
C5053 0.01
R5071 2.7
C5065 100/16V
R5068 470
C5063 150P
R5077 560
R5056 51
R5053 3300
R5051 820
C5068 0.01
R5072 39
R5074 33K
Q5061 2SC3311A (SWITCHING)
R5081 6800
C5069 0.01
C5066 220/16V
R5073 100
R5080 330
Q5062 2SC3311A (BUFFER)
R5079 4700
(TO TV PROCESS C.B.A. P5301)
P351
VM 1
2
SW+12V 3
RED 4
GREEN 5
BLUE 6
R388 330
R387 330
R386 330
P369
BLUE 1
GREEN 2
RED 3
D351
C357
TP49
R363 1K A 820 B
C361
R364 1K
R351 100K
R369 1K
R370
TP48
R365 1K A 820 B
C362
R366 1K
R352 100K
R371 1K
R372
D381 MA165
D382 MA165
IC351 TDA6103Q (RGB AMP)
R AMP
G AMP
B AMP
GND +V VDD
J356
J355
TP50
J352
R354 1K
J353
R356 1K
J354
R355 1K
D352 ERA22-04
D353 ERA22-04
C366 4.7/250V
R375 1K
R376 47K
R378 100K
C367
C365 10/16V
R379 120K
R377 10K
C364 0.22/50V
R380 4700
TP46
R367 1K A 820 B
C363
R368 1K
R353 100K
D354 ERA22-04
R373 1K
R374
D383 MA165
D384 MA165
D385
C381 100/16V
D386 MA165
Q381 2SA1309A (SWITCHING)
R384
D387 MA4150M
C382 100P
R383 12K
R382 47K
R381 47K
R385 120
(TO TV MAIN C.B.A. ZP503)
JC10
SCREEN
(TO TV MAIN C.B.A. T551)
P355
1 SCREEN
P354
1 GND
P353
1
2 KB
3 HEATER
4 GND
5 KR
6 G2
7 KG
8 G1
9 E
CRT
C354 1000P A 3300P B /2KV
TP47
FOCUS1
(TO TV MAIN C.B.A. T551)
FOCUS2
ANODE
P352 (TO TV MAIN C.B.A. P503)
1 +220V
2
3 +140V/115V
4
5 HEATER
6 GND
P356
1 GND
VOLTAGE CHART
LRM63021
A B C D E F G H I J K L 0
9 8 7 6 5 4 3 2 1

DEFLECTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



IC951
LA6515
(POWER AMP)
GND
VCC
D955
MA165
R961
12
R962
150
Q951
2SC1383
(REGULATOR)
C954
1/50V
D956
MA4075-M
(7.5V)
C953
10/50V
C952
0.01
R951
68K
R952
39K
C951
0.33
R953
10
D951
MA4150-M
(15V)
R954
3.9
R956
39K
R957
18K
R955
5.6K
R958
16.5K
D953
MA165
R960
3.9
D954
MA4150-M
(15V)
D952
MA165
C955
121K
R959
4.42K
L952
L951
L953
P951
GEOMAGNETIC CORRECT
GEOMAGNETIC CORRECT
(TO TV MAIN C.B.A.)
P952
GND
VR3
VR2
VR1
GEOMAGNETIC CORRECT
DAF-H
SW+12V
H-PULSE
R415
(TO TV MAIN C.B.A.)
P953
DAF-V
V-RAMP
-17V
R904
226K
R907
680
R908
100
Q902
2SC3311A
(INVERTER)
C903
150P
R905
10K
R906
10K
C904
10/16V
C911
0.01
VDD
GND
RESET
Q2
Q̄2
RESET
Q̄1
Q1
IC901
MC14538BCP
(MULTIVIBRATOR)
GND
GND
C902
150P
R903
0
J904
DYNAMIC
FOCUS
PHASE
R936
500K
R902
39K
C901
470P
R901
10K
Q901
2SD601A
(INVERTER)
R935
GND
Y
X
IC902
CA0005AD
(MULTIPLIER)
VEE
VCC
R909
121K
R910
100K
R911
390
D902
MA4051-L
(5.1V)
C906
10/50V
D901
MA4051-L
(5.1V)
C905
10/50V
R912
560
C907
10/25V
R913
10K
C908
10/25V
R914
100
C909
0.01
C910
10/50V
C915
4.7/25V
IC903
AN1358S-E1
(OP AMP)
VCC
VEE
R915
1800
R918
113K
R917
8200
C916
10/50V
C917
1000P
R916
100K
Z
A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
9

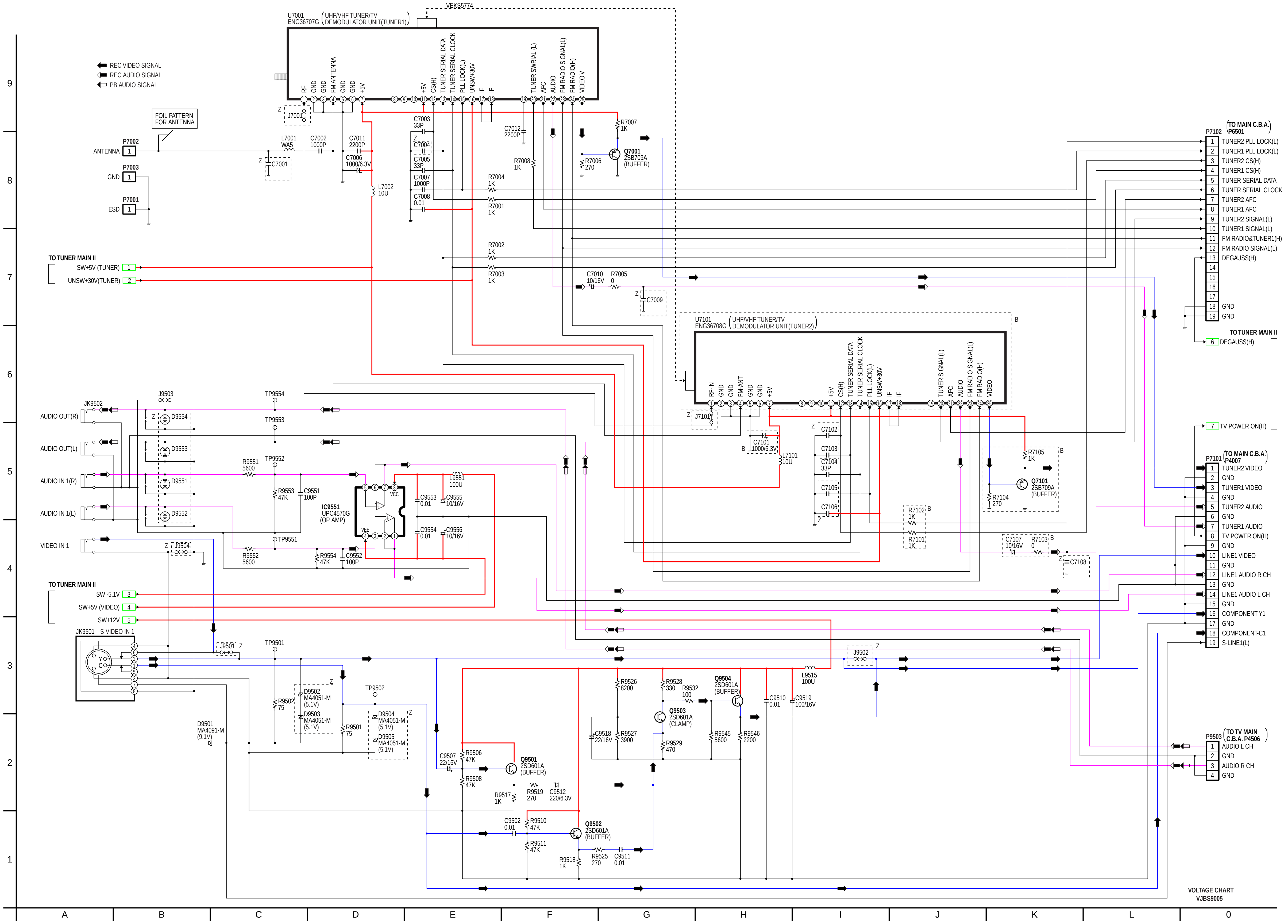
VOLTAGE CHART
LRM63020

TUNER MAIN I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
VEKS5774
U7001 ENG36707G (UHF/VHF TUNER/TV DEMODULATOR UNIT(TUNER1))
RF GND GND FM ANTENNA GND GND +5V +5V CS(H) TUNER SERIAL DATA TUNER SERIAL CLOCK PLL LOCK(L) UNSW+30V IF IF TUNER SWRIAL (L) AFC AUDIO FM RADIO SIGNAL(L) FM RADIO(H) VIDEO V
FOIL PATTERN FOR ANTENNA
ANTENNA P7002
GND P7003
ESD P7001
J7001
C7001
L7001 WA5
C7002 1000P
C7011 2200P
C7006 1000/6.3V
L7002 10U
C7003 33P
C7004
C7005 33P
C7007 1000P
C7008 0.01
C7012 2200P
R7004 1K
R7001 1K
R7008 1K
R7007 1K
R7006 270
Q7001 2SB709A (BUFFER)
R7002 1K
R7003 1K
C7010 10/16V
R7005 0
C7009
TO TUNER MAIN II
SW+5V (TUNER)
UNSW+30V(TUNER)
U7101 ENG36708G (UHF/VHF TUNER/TV DEMODULATOR UNIT(TUNER2))
RF-IN GND GND FM-ANT GND GND +5V +5V CS(H) TUNER SERIAL DATA TUNER SERIAL CLOCK PLL LOCK(L) UNSW+30V IF IF TUNER SIGNAL(L) AFC AUDIO FM RADIO SIGNAL(L) FM RADIO(H) VIDEO
J7101
C7101 1000/6.3V
L7101 10U
C7102
C7103
C7104 33P
C7105
C7106
R7102 1K
R7101 1K
R7105 1K
R7104 270
Q7101 2SB709A (BUFFER)
C7107 10/16V
R7103 0
C7108
P7102 (TO MAIN C.B.A. P6501)
1 TUNER2 PLL LOCK(L)
2 TUNER1 PLL LOCK(L)
3 TUNER2 CS(H)
4 TUNER1 CS(H)
5 TUNER SERIAL DATA
6 TUNER SERIAL CLOCK
7 TUNER2 AFC
8 TUNER1 AFC
9 TUNER2 SIGNAL(L)
10 TUNER1 SIGNAL(L)
11 FM RADIO&TUNER1(H)
12 FM RADIO SIGNAL(L)
13 DEGAUSS(H)
14
15
16
17
18 GND
19 GND
TO TUNER MAIN II
6 DEGAUSS(H)
7 TV POWER ON(H)
P7101 (TO MAIN C.B.A. P4007)
1 TUNER2 VIDEO
2 GND
3 TUNER1 VIDEO
4 GND
5 TUNER2 AUDIO
6 GND
7 TUNER1 AUDIO
8 TV POWER ON(H)
9 GND
10 LINE1 VIDEO
11 GND
12 LINE1 AUDIO R CH
13 GND
14 LINE1 AUDIO L CH
15 GND
16 COMPONENT-Y1
17 GND
18 COMPONENT-C1
19 S-LINE1(L)
JK9502
AUDIO OUT(R)
AUDIO OUT(L)
AUDIO IN 1(R)
AUDIO IN 1(L)
VIDEO IN 1
J9503
D9554
D9553
D9551
D9552
TP9554
TP9553
TP9552
R9551 5600
R9553 47K
C9551 100P
IC9551 UPC4570G (OP AMP)
VCC
VEE
C9553 0.01
C9555 10/16V
L9551 100U
C9554 0.01
C9556 10/16V
TP9551
R9552 5600
R9554 47K
C9552 100P
J9504
TO TUNER MAIN II
SW -5.1V
SW+5V (VIDEO)
SW+12V
JK9501 S-VIDEO IN 1
Y C
J9501
TP9501
R9502 75
D9502 MA4051-M (5.1V)
D9503 MA4051-M (5.1V)
TP9502
R9501 75
D9504 MA4051-M (5.1V)
D9505 MA4051-M (5.1V)
D9501 MA4091-M (9.1V)
C9507 22/16V
R9506 47K
R9508 47K
Q9501 2SD601A (BUFFER)
R9517 1K
R9519 270
C9512 220/6.3V
C9502 0.01
R9510 47K
R9511 47K
Q9502 2SD601A (BUFFER)
R9518 1K
R9525 270
C9511 0.01
R9526 8200
R9528 330
R9532 100
Q9503 2SD601A (CLAMP)
C9518 22/16V
R9527 3900
R9529 470
Q9504 2SD601A (BUFFER)
R9545 5600
R9546 2200
C9510 0.01
L9515 100U
C9519 100/16V
J9502
P9503 (TO TV MAIN C.B.A. P4506)
1 AUDIO L CH
2 GND
3 AUDIO R CH
4 GND
VOLTAGE CHART VJBS9005
A B C D E F G H I J K L 0
9 8 7 6 5 4 3 2 1

TUNER MAIN II SCHEMATIC DIAGRAM

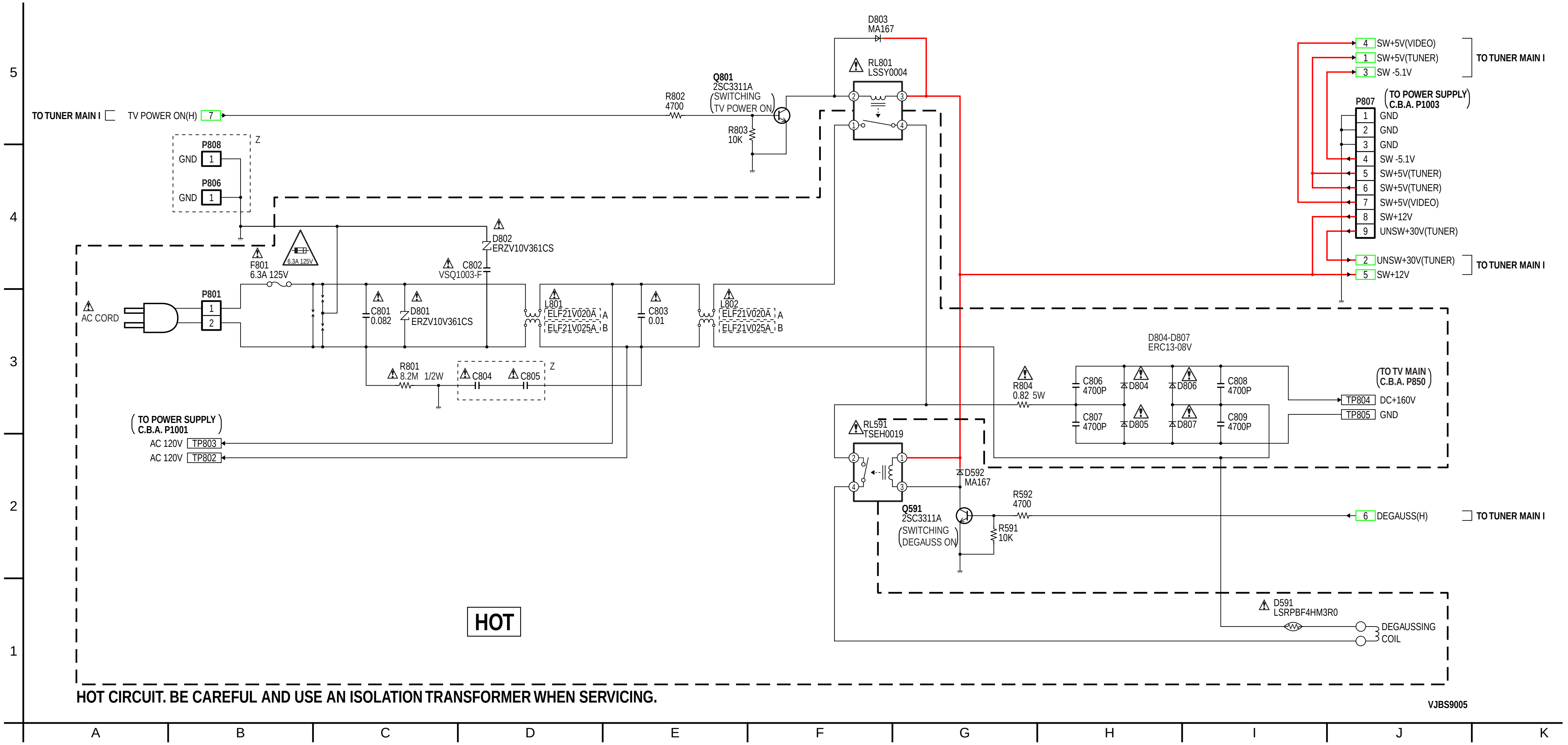
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 6.3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 6.3A 125V/250V

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z


D803
MA167
RL801
LSSY0004
Q801
2SC3311A
(SWITCHING
TV POWER ON)
R802
4700
R803
10K
TO TUNER MAIN I
TV POWER ON(H)
7
P808
GND
1
P806
GND
1
Z
4 SW+5V(VIDEO)
1 SW+5V(TUNER)
3 SW -5.1V
TO TUNER MAIN I
P807
(TO POWER SUPPLY C.B.A. P1003)
1 GND
2 GND
3 GND
4 SW -5.1V
5 SW+5V(TUNER)
6 SW+5V(TUNER)
7 SW+5V(VIDEO)
8 SW+12V
9 UNSW+30V(TUNER)
2 UNSW+30V(TUNER)
5 SW+12V
TO TUNER MAIN I
D802
ERZV10V361CS
C802
VSQ1003-F
F801
6.3A 125V
6.3A 125V
P801
1
2
AC CORD
C801
0.082
D801
ERZV10V361CS
L801
ELF21V020A A
ELF21V025A B
C803
0.01
L802
ELF21V020A A
ELF21V025A B
R801
8.2M 1/2W
C804
C805
Z
D804-D807
ERC13-08V
R804
0.82 5W
C806
4700P
D804
D806
C808
4700P
C807
4700P
D805
D807
C809
4700P
(TO TV MAIN C.B.A. P850)
TP804 DC+160V
TP805 GND
(TO POWER SUPPLY C.B.A. P1001)
AC 120V TP803
AC 120V TP802
RL591
TSEH0019
D592
MA167
Q591
2SC3311A
(SWITCHING
DEGAUSS ON)
R592
4700
R591
10K
6 DEGAUSS(H)
TO TUNER MAIN I
D591
LSRPBF4HM3R0
DEGAUSSING
COIL
HOT
VJBS9005
1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
K

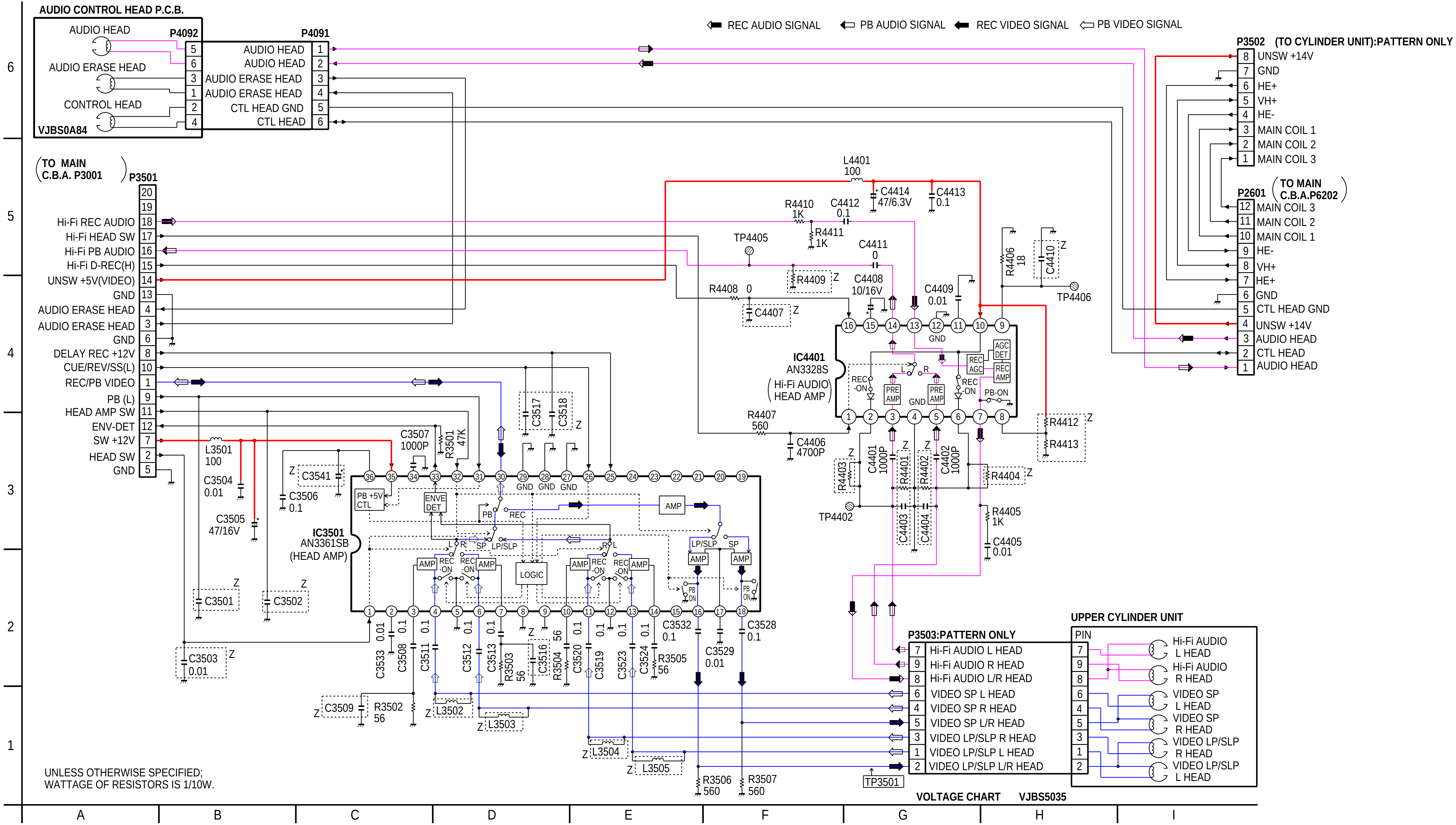
HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z


AUDIO CONTROL HEAD P.C.B.
AUDIO HEAD
AUDIO ERASE HEAD
CONTROL HEAD
VJBS0A84
P4092
P4091
AUDIO HEAD 1
AUDIO HEAD 2
AUDIO ERASE HEAD 3
AUDIO ERASE HEAD 4
CTL HEAD GND 5
CTL HEAD 6
REC AUDIO SIGNAL
PB AUDIO SIGNAL
REC VIDEO SIGNAL
PB VIDEO SIGNAL
P3502 (TO CYLINDER UNIT):PATTERN ONLY
8 UNSW +14V
7 GND
6 HE+
5 VH+
4 HE-
3 MAIN COIL 1
2 MAIN COIL 2
1 MAIN COIL 3
TO MAIN C.B.A. P3001
P3501
20
19
Hi-Fi REC AUDIO 18
Hi-Fi HEAD SW 17
Hi-Fi PB AUDIO 16
Hi-Fi D-REC(H) 15
UNSW +5V(VIDEO) 14
GND 13
AUDIO ERASE HEAD 4
AUDIO ERASE HEAD 3
GND 6
DELAY REC +12V 8
CUE/REV/SS(L) 10
REC/PB VIDEO 1
PB (L) 9
HEAD AMP SW 11
ENV-DET 12
SW +12V 7
HEAD SW 2
GND 5
L3501 100
C3504 0.01
C3505 47/16V
C3541
C3506 0.1
C3507 1000P
R3501 47K
C3517
C3518
IC3501 AN3361SB (HEAD AMP)
PB +5V CTL
ENVE DET
PB
REC
AMP
LP/SLP
SP
LOGIC
REC -ON
PB ON
GND
C3501
C3502
C3503 0.01
C3533 0.01
C3508 0.1
C3511 0.1
C3512 0.1
C3513 0.1
R3503 56
C3516
R3504 56
C3520 0.1
C3519 0.1
C3523 0.1
C3524 0.1
R3505 56
C3532 0.1
C3529 0.01
C3528 0.1
C3509
R3502 56
L3502
L3503
L3504
L3505
R3506 560
R3507 560
TP3501
L4401 100
C4414 47/6.3V
C4413 0.1
R4410 1K
C4412 0.1
R4411 1K
TP4405
C4411 0
R4409
C4408 10/16V
R4408 0
C4407
C4409 0.01
R4406 18
C4410
TP4406
IC4401 AN3328S (Hi-Fi AUDIO HEAD AMP)
REC AGC
AGC DET
REC AMP
PRE AMP
REC -ON
PB-ON
R4407 560
C4406 4700P
R4412
R4413
R4403
C4401 1000P
R4401
R4402
C4402 1000P
R4404
TP4402
C4403
C4404
R4405 1K
C4405 0.01
P2601 TO MAIN C.B.A.P6202
12 MAIN COIL 3
11 MAIN COIL 2
10 MAIN COIL 1
9 HE-
8 VH+
7 HE+
6 GND
5 CTL HEAD GND
4 UNSW +14V
3 AUDIO HEAD
2 CTL HEAD
1 AUDIO HEAD
UPPER CYLINDER UNIT
P3503:PATTERN ONLY
PIN
7 Hi-Fi AUDIO L HEAD
9 Hi-Fi AUDIO R HEAD
8 Hi-Fi AUDIO L/R HEAD
6 VIDEO SP L HEAD
4 VIDEO SP R HEAD
5 VIDEO SP L/R HEAD
3 VIDEO LP/SLP R HEAD
1 VIDEO LP/SLP L HEAD
2 VIDEO LP/SLP L/R HEAD
Hi-Fi AUDIO L HEAD
Hi-Fi AUDIO R HEAD
VIDEO SP L HEAD
VIDEO SP R HEAD
VIDEO LP/SLP R HEAD
VIDEO LP/SLP L HEAD
VOLTAGE CHART VJBS5035
UNLESS OTHERWISE SPECIFIED; WATTAGE OF RESISTORS IS 1/10W.
A B C D E F G H I
1 2 3 4 5 6

CAPSTAN STATOR SCHEMATIC DIAGRAM

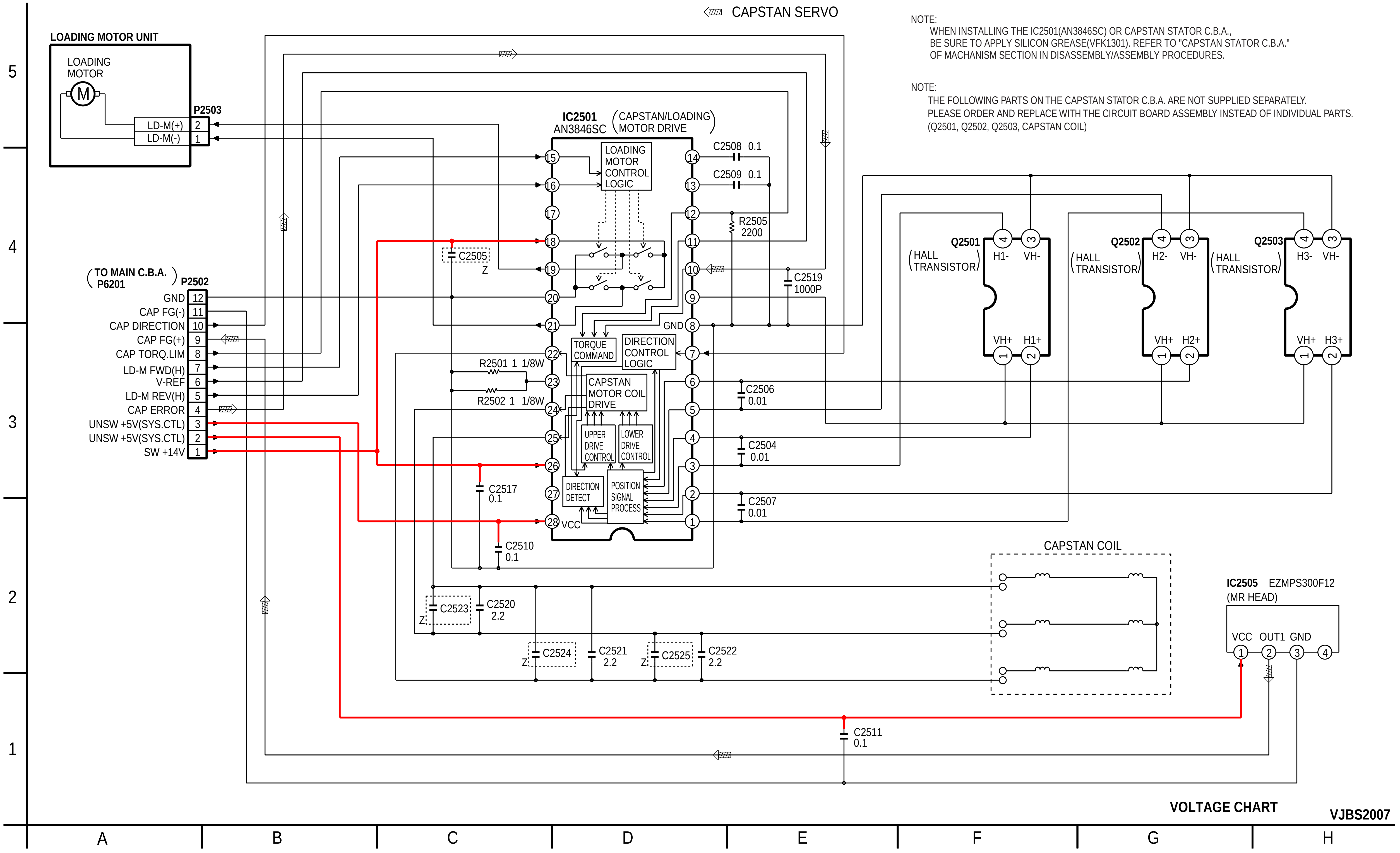
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z

NOTE:
WHEN INSTALLING THE IC2501(AN3846SC) OR CAPSTAN STATOR C.B.A.,
BE SURE TO APPLY SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR C.B.A."
OF MACHANISM SECTION IN DISASSEMBLY/ASSEMBLY PROCEDURES.

NOTE:
THE FOLLOWING PARTS ON THE CAPSTAN STATOR C.B.A. ARE NOT SUPPLIED SEPARATELY.
PLEASE ORDER AND REPLACE WITH THE CIRCUIT BOARD ASSEMBLY INSTEAD OF INDIVIDUAL PARTS.
(Q2501, Q2502, Q2503, CAPSTAN COIL)

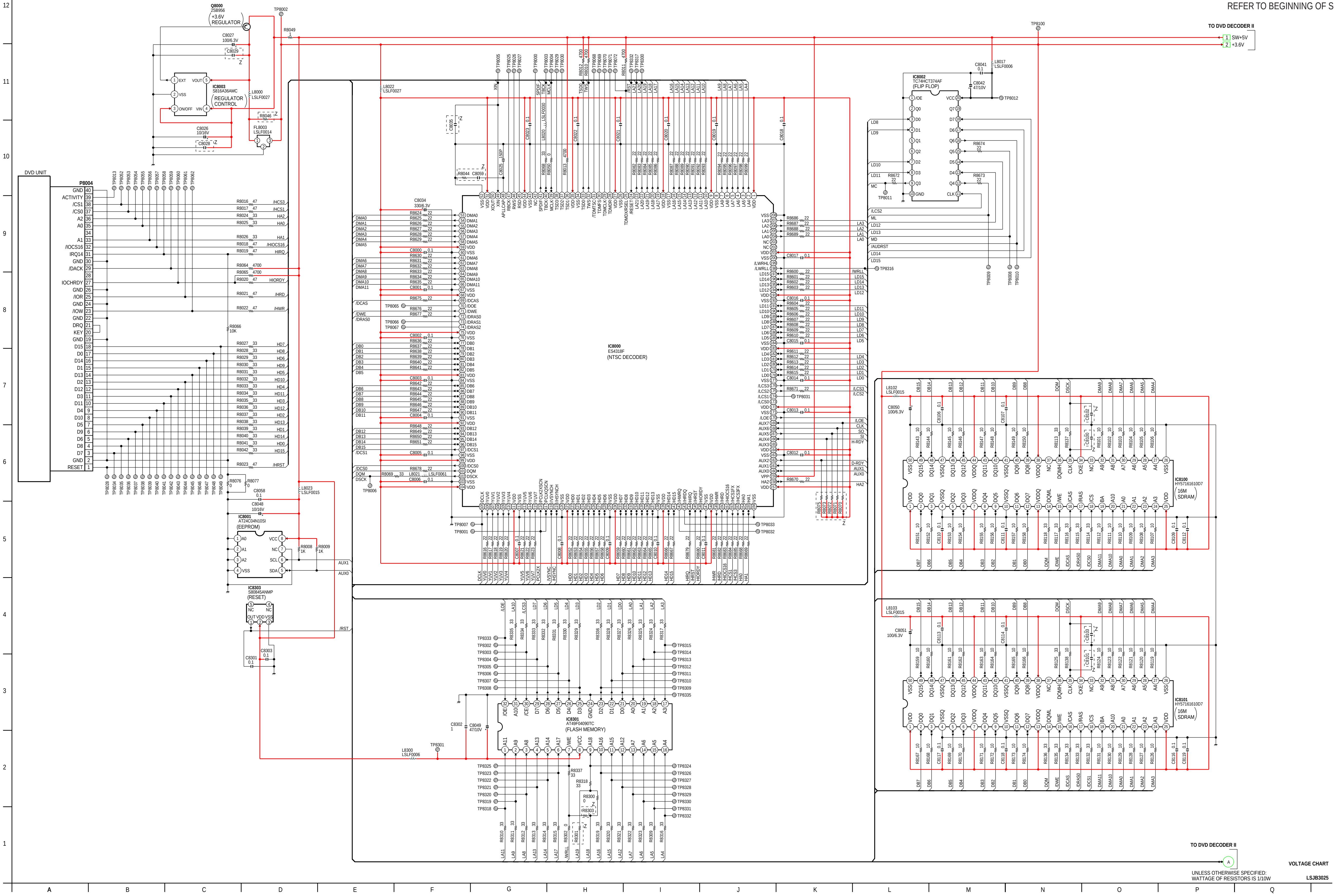

CAPSTAN SERVO
LOADING MOTOR UNIT
LOADING MOTOR
M
P2503
LD-M(+) 2
LD-M(-) 1
IC2501 AN3846SC (CAPSTAN/LOADING MOTOR DRIVE)
LOADING MOTOR CONTROL LOGIC
C2508 0.1
C2509 0.1
R2505 2200
C2519 1000P
C2505 Z
TORQUE COMMAND
DIRECTION CONTROL LOGIC
CAPSTAN MOTOR COIL DRIVE
UPPER DRIVE CONTROL
LOWER DRIVE CONTROL
DIRECTION DETECT
POSITION SIGNAL PROCESS
VCC
GND
R2501 1 1/8W
R2502 1 1/8W
C2517 0.1
C2510 0.1
C2506 0.01
C2504 0.01
C2507 0.01
(TO MAIN C.B.A. P6201)
P2502
GND 12
CAP FG(-) 11
CAP DIRECTION 10
CAP FG(+) 9
CAP TORQ.LIM 8
LD-M FWD(H) 7
V-REF 6
LD-M REV(H) 5
CAP ERROR 4
UNSW +5V(SYS.CTL) 3
UNSW +5V(SYS.CTL) 2
SW +14V 1
Q2501 (HALL TRANSISTOR) H1- VH- VH+ H1+
Q2502 (HALL TRANSISTOR) H2- VH- VH+ H2+
Q2503 (HALL TRANSISTOR) H3- VH- VH+ H3+
CAPSTAN COIL
C2523 Z
C2520 2.2
C2524 Z
C2521 2.2
C2525 Z
C2522 2.2
IC2505 EZMPS300F12 (MR HEAD)
VCC OUT1 GND
C2511 0.1
VOLTAGE CHART
VJBS2007
5 4 3 2 1
A B C D E F G H

DVD DECODER I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z


DVD UNIT
P8004
Q8000 2SB956 +3.6V REGULATOR
IC8003 S816A36AMC REGULATOR CONTROL
IC8000 ES4318F (NTSC DECODER)
IC8001 AT24C04N10SI (EEPROM)
IC8303 S80845ANMP (RESET)
IC8002 TC74HCT374AF (FLIP FLOP)
IC8100 HY57161610D7 (16M SDRAM)
IC8101 HY57161610D7 (16M SDRAM)
IC8301 AT49F040970TC (FLASH MEMORY)
TO DVD DECODER II
SW+5V
+3.6V
A

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W

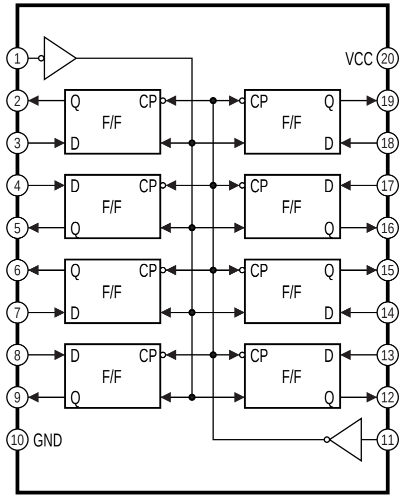
VOLTAGE CHART

LSJB3025

I/O CHART OF IC8000

Pin No.	I/O	Signal Name	Description
1	I	VDD	+3.6V
2	O	LA4	Memory address 4
3	O	LA5	Memory address 5
4	O	LA6	Memory address 6
5	O	LA7	Memory address 7
6	O	LA8	Memory address 8
7	O	LA9	Memory address 9
8	-	VSS	Ground
9	I	VDD	+3.6V
10	O	LA10	Memory address 10
11	O	LA11	Memory address 11
12	O	LA12	Memory address 12
13	O	LA13	Memory address 13
14	O	LA14	Memory address 14
15	O	LA15	Memory address 15
16	O	LA16	Memory address 16
17	-	VSS	Ground
18	I	VDD	+3.6V
19	O	LA17	Memory address 17
20	O	LA18	Memory address 18
21	O	LA19	Memory address 19
22	O	LA20	Memory address 20
23	O	LA21	Memory address 21
24	I	/RESET	Reset : low
25	-	TDMDX/RSEL	(Not used)
26	-	VSS	Ground
27	I	VDD	+3.6V
28	-	TDMDR	(Not used)
29	-	TDMCLK	(Not used)
30	-	TDMFS	(Not used)
31	-	/TDMTSC	(Not used)
32	O	TWS	Audio transmit frame sync
33	O	TSD0	Audio serial data
34	-	VSS	Ground
35	I	VDD	+3.6V
36	-	TSD1	(Not used)
37	-	TSD2	(Not used)
38	-	TSD3	(Not used)
39	I/O	MCLK	Audio master clock
40	I/O	TBCK	Audio transmit bit clock
41	O	SPDIF	IEC958 audio data
42	-	NC	(Not used)
43	-	VSS	Ground
44	I	VDD	+3.6V
45	-	RSD	(Not used)
46	-	RWS	(Not used)
47	-	RBCK	(Not used)
48	-	APLLCAP	(Not used)
49	I	XIN	27MHz clock
50	-	XOUT	(Not used)
51	I	VDD	+3.6V
52	-	VSS	Ground
53	O	DMA0	SDRAM address 0
54	O	DMA1	SDRAM address 1
55	O	DMA2	SDRAM address 2
56	O	DMA3	SDRAM address 3
57	O	DMA4	SDRAM address 4
58	O	DMA5	SDRAM address 5
59	I	VDD	+3.6V
60	-	VSS	Ground
61	O	DMA6	SDRAM address 6
62	O	DMA7	SDRAM address 7
63	O	DMA8	SDRAM address 8
64	O	DMA9	SDRAM address 9
65	O	DMA10	SDRAM address 10
66	O	DMA11	SDRAM address 11
67	-	VSS	Ground
68	I	VDD	+3.6V
69	O	/DCAS	Column address strobe : low
70	-	/DOE	(Not used)
71	O	/DWE	Write enable : low
72	O	/DRAS0	Row address strobe : low
73	-	/DRAS1	(Not used)
74	-	/DRAS2	(Not used)
75	I	VDD	+3.6V
76	-	VSS	Ground
77	I/O	DB0	SDRAM data 0
78	I/O	DB1	SDRAM data 1
79	I/O	DB2	SDRAM data 2
80	I/O	DB3	SDRAM data 3
81	I/O	DB4	SDRAM data 4
82	I/O	DB5	SDRAM data 5
83	I	VDD	+3.6V
84	-	VSS	Ground
85	I/O	DB6	SDRAM data 6
86	I/O	DB7	SDRAM data 7
87	I/O	DB8	SDRAM data 8
88	I/O	DB9	SDRAM data 9
89	I/O	DB10	SDRAM data 10
90	I/O	DB11	SDRAM data 11
91	-	VSS	Ground
92	I	VDD	+3.6V
93	I/O	DB12	SDRAM data 12
94	I/O	DB13	SDRAM data 13
95	I/O	DB14	SDRAM data 14
96	I/O	DB15	SDRAM data 15
97	O	/DCS1	SDRAM chip select : low
98	-	VSS	Ground
99	I	VDD	+3.6V
100	O	/DCS0	SDRAM chip select : low
101	O	DQM	Data input/output mask
102	O	DSCK	SDRAM clock
103	-	VSS	Ground
104	I	VDD	+3.6V
105	I	DCLK	27MHz clock
106	O	YUV0	YUV data 0
107	O	YUV1	YUV data 1
108	O	YUV2	YUV data 2
109	O	YUV3	YUV data 3
110	O	YUV4	YUV data 4
111	I	VDD	+3.6V
112	-	VSS	Ground
113	I	YUV5	YUV data 5
114	I	YUV6	YUV data 6
115	I	YUV7	YUV data 7
116	I	PCLK2XSCN	2X pixel clock
117	I/O	PCLKQSCN	pixel clock
118	I/O	/VSYNCH	V-sync signal
119	I/O	/HSYNCH	V-sync signal
120	-	VSS	Ground
121	I	VDD	+3.6V
122	I/O	HD0	Host data 0
123	I/O	HD1	Host data 1
124	I/O	HD2	Host data 2
125	I/O	HD3	Host data 3
126	I/O	HD4	Host data 4
127	I/O	HD5	Host data 5
128	I/O	HD6	Host data 6
129	-	VSS	Ground
130	I	VDD	+3.6V
131	I/O	HD7	Host data 7
132	I/O	HD8	Host data 8
133	I/O	HD9	Host data 9
134	I/O	HD10	Host data 10
135	I/O	HD11	Host data 11
136	I/O	HD12	Host data 12
137	I/O	HD13	Host data 13
138	-	VSS	Ground
139	I	VDD	+3.6V
140	I/O	HD14	Host data 14
141	I/O	HD15	Host data 15
142	-	/HWRQ	(Not used)
143	-	/HRDQ	(Not used)
144	I/O	HIRQ	Host interrupt
145	I	/HRST	Host reset : low
146	I	HIORDY	Host I/O ready
147	-	VSS	Ground
148	I	VDD	+3.6V
149	O	/HWR	Host write request : low
150	I	/HRD	Host read request : low
151	I	/HIOCS16	Device 16-bit data transfer
152	O	/HCS1FX	Host select 1
153	O	/HCS3FX	Host select 3
154	I/O	HA0	Host address 0
155	I/O	HA1	Host address 1
156	-	VSS	Ground
157	I	VDD	+3.6V
158	I/O	HA2	Host address 2
159	I	VPP	Peripheral protection voltage
160	I/O	AUX0	I2C serial data
161	I	AUX1	I2C serial clock
162	O	AUX2	DVD ready (Busy : low)
163	-	VSS	Ground
164	I	VDD	+3.6V
165	-	AUX3	(Not used)
166	I	AUX4	DVD chip select : low
167	O	AUX5	Serial data 1
168	I	AUX6	Serial data 0
169	I	AUX7	Serial clock
170	O	/LOE	Output enable : low
171	-	VSS	Ground
172	I	VDD	+3.6V
173	-	/LCS0	(Not used)
174	-	/LCS1	(Not used)
175	O	/LCS2	Clock
176	O	/LCS3	Memory chip select : low
177	-	VSS	Ground
178	I/O	LD0	Memory data 0
179	I/O	LD1	Memory data 1
180	I/O	LD2	Memory data 2
181	I/O	LD3	Memory data 3
182	I/O	LD4	Memory data 4
183	I	VDD	+3.6V
184	-	VSS	Ground
185	I/O	LD5	Memory data 5
186	I/O	LD6	Memory data 6
187	I/O	LD7	Memory data 7
188	I/O	LD8	Memory data 8
189	I/O	LD9	Memory data 9
190	I/O	LD10	Memory data 10
191	I/O	LD11	Memory data 11
192	-	VSS	Ground
193	I	VDD	+3.6V
194	I/O	LD12	Memory data 12
195	I/O	LD13	Memory data 13
196	I/O	LD14	Memory data 14
197	I/O	LD15	Memory data 15
198	O	/LWRLL	Write enable : low
199	-	/LWRHL	(Not used)
200	-	VSS	Ground
201	I	VDD	+3.6V
202	-	NC	(Not used)
203	-	NC	(Not used)
204	O	LA0	Memory address 0
205	O	LA1	Memory address 1
206	O	LA2	Memory address 2
207	O	LA3	Memory address 3
208	-	VSS	Ground

IC8002 DETAIL BLOCK DIAGRAM



I/O CHART OF IC8301

Pin No.	I/O	Signal Name	Description
1	I	A11	Memory address 11
2	I	A9	Memory address 9
3	I	A8	Memory address 8
4	I	A13	Memory address 13
5	I	A14	Memory address 14
6	I	A17	Memory address 17
7	I	/WE	Write enable : low
8	I	VCC	+5.0V
9	I	A18	Memory address 18
10	I	A16	Memory address 16
11	I	A15	Memory address 15
12	I	A12	Memory address 12
13	I	A7	Memory address 7
14	I	A6	Memory address 6
15	I	A5	Memory address 5
16	I	A4	Memory address 4
17	I	A3	Memory address 3
18	I	A2	Memory address 2
19	I	A1	Memory address 1
20	I	A0	Memory address 0
21	I/O	D0	Memory data 0
22	I/O	D1	Memory data 1
23	I/O	D2	Memory data 2
24	-	GND	Ground
25	I/O	D3	Memory data 3
26	I/O	D4	Memory data 4
27	I/O	D5	Memory data 5
28	I/O	D6	Memory data 6
29	I/O	D7	Memory data 7
30	I	/CE	Memory chip select : low
31	I	A10	Memory address 10
32	I	/OE	Output enable : low

I/O CHART OF IC8100/IC8101

Pin No.	I/O	Signal Name	Description
1	I	VDD	+3.6V
2	I/O	DQ0	SDRAM data 7
3	I/O	DQ1	SDRAM data 6
4	-	VSSQ	Ground
5	I/O	DQ2	SDRAM data 5
6	I/O	DQ3	SDRAM data 4
7	-	VDDQ	+3.6V
8	I/O	DQ4	SDRAM data 3
9	I/O	DQ5	SDRAM data 2
10	-	VSSQ	Ground
11	I/O	DQ6	SDRAM data 1
12	I/O	DQ7	SDRAM data 0
13	I	VDDQ	+3.6V
14	I	DQML	Data input/output mask
15	I	/WE	Write enable : low
16	I	/CAS	Column address strobe : low
17	I	/RAS	Row address strobe : low
18	I	/CS	SDRAM chip select : low
19	I	BA	SDRAM address 11
20	I	A10	SDRAM address 10
21	I	A0	SDRAM address 0
22	I	A1	SDRAM address 1
23	I	A2	SDRAM address 2
24	I	A3	SDRAM address 3
25	I	VDD	+3.6V
26	-	VSS	Ground
27	I	A4	SDRAM address 4
28	I	A5	SDRAM address 5
29	I	A6	SDRAM address 6
30	I	A7	SDRAM address 7
31	I	A8	SDRAM address 8
32	I	A9	SDRAM address 9
33	-	NC	(Not used)
34	-	CKE	(Not used)
35	I	CLK	SDRAM clock
36	I	DQMH	Data input/output mask
37	-	NC	(Not used)
38	I	VDDQ	+3.6V
39	I/O	DQ8	SDRAM data 8
40	I/O	DQ9	SDRAM data 9
41	-	VSSQ	Ground
42	I/O	DQ10	SDRAM data 10
43	I/O	DQ11	SDRAM data 11
44	-	VDDQ	+3.6V
45	I/O	DQ12	SDRAM data 12
46	I/O	DQ13	SDRAM data 13
47	-	VSSQ	Ground
48	I/O	DQ14	SDRAM data 14
49	I/O	DQ15	SDRAM data 15
50	-	VSS	Ground

I/O CHART OF IC8001

Pin No.	I/O	Signal Name	Description
1	-	A0	(Not used)
2	-	A1	(Not used)
3	-	A2	(Not used)
4	-	VSS	Ground
5	I/O	SDA	I2C Serial data
6	O	SCL	I2C Serial clock
7	-	NC	(Not used)
8	I	VCC	+5.0V

I/O CHART OF IC8403

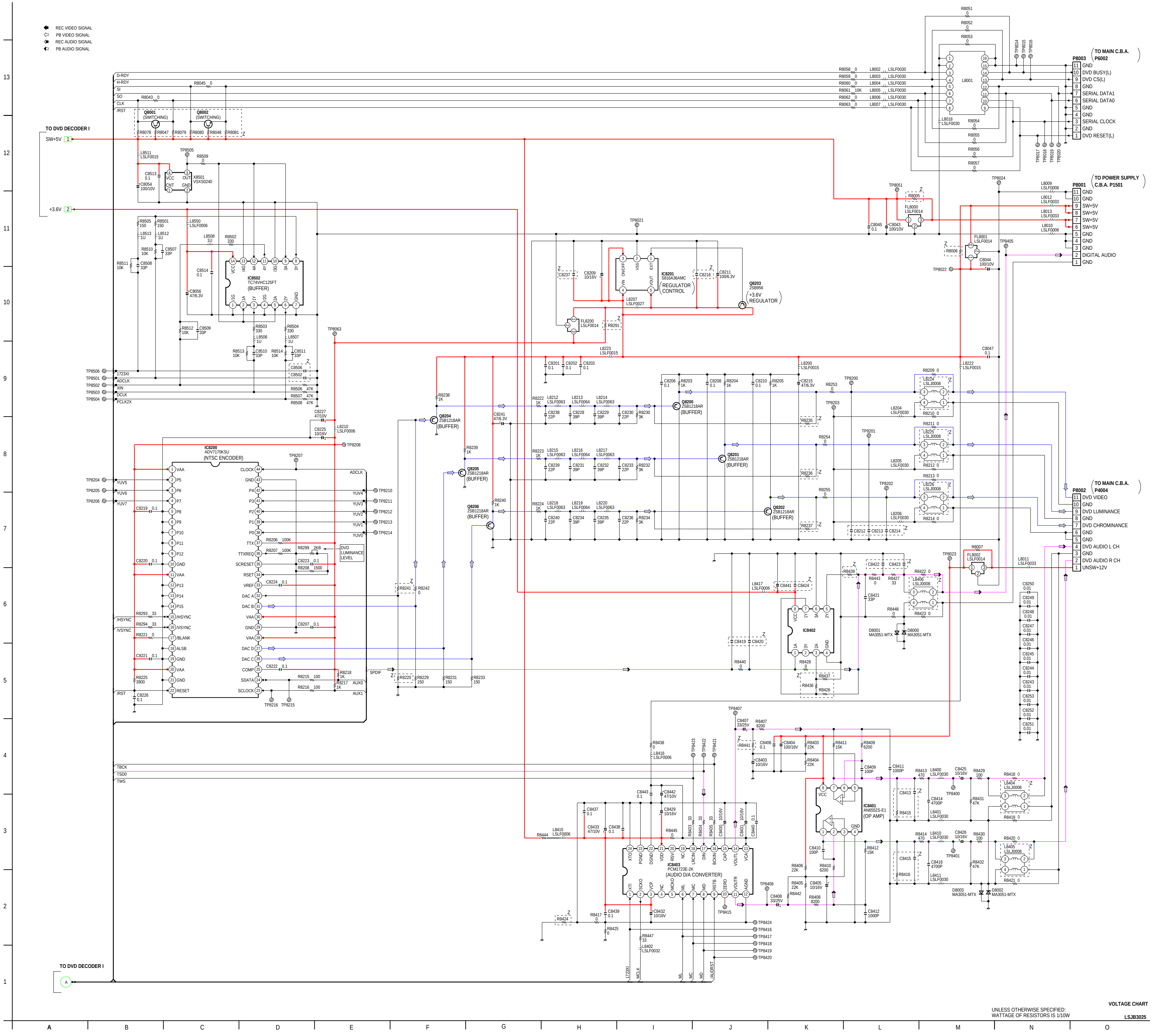
Pin No.	I/O	Signal Name	Description
1	I	XTI	27MHz clock
2	O	SCKO	System clock
3	I	VCP	+5.0V
4	-	NC	(Not used)
5	-	MCKO	(Not used)
6	I	ML	Mode control latch
7	I	MC	Mode control clock
8	I	MD	Mode control data
9	I	RSTB	Audio DAC reset : low
10	-	ZERO	(Not used)
11	O	V OUT R	Audio R-CH
12	-	GNDA	Ground
13	I	VCA	+5.0V
14	O	V OUT L	Audio L-CH
15	-	CAP	Audio common
16	I	BCKIN	Audio bit clock
17	I	DIN	Audio serial data
18	I	LRCIN	Audio left/right clock
19	-	NC	(Not used)
20	-	RSV	(Not used)
21	I	VDD	+5.0V
22	-	GNDD	Ground
23	-	GNDP	Ground
24	-	XTO	(Not used)

DVD DECODER II SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

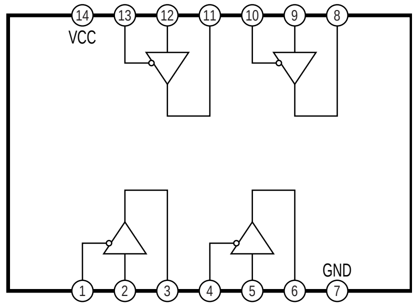
COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



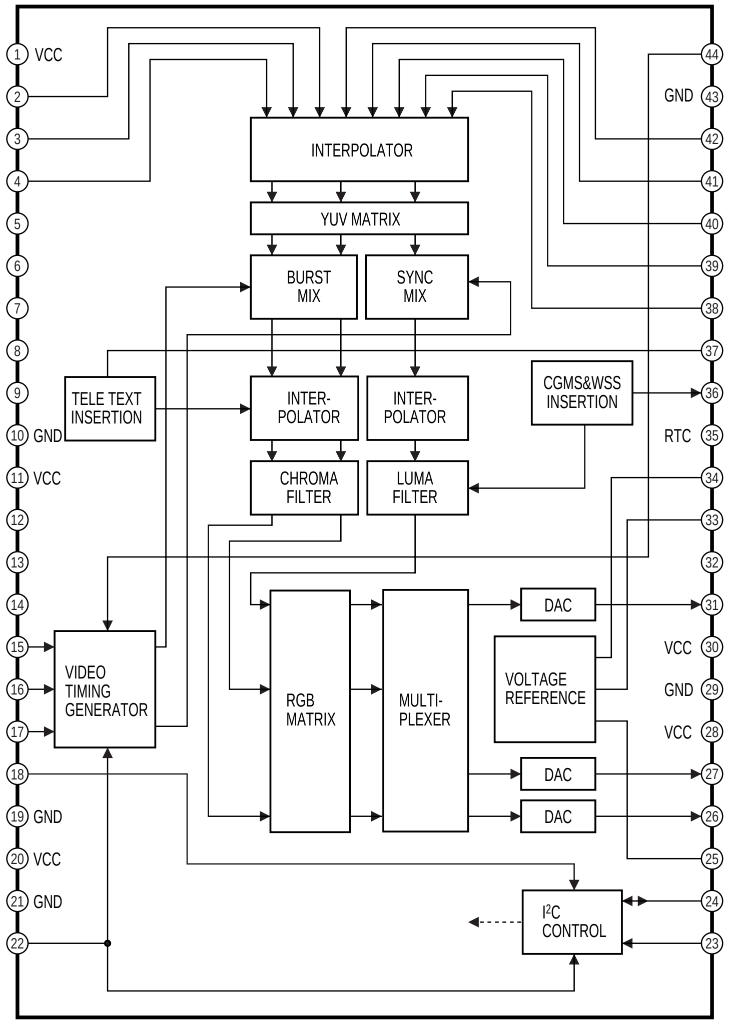
REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
TO DVD DECODER I
SW+5V
+3.6V
TO MAIN C.B.A. P6002
P8003
GND
DVD BUSY(L)
DVD CS(L)
SERIAL DATA1
SERIAL DATA0
SERIAL CLOCK
DVD RESET(L)
TO POWER SUPPLY C.B.A. P1501
P8001
DIGITAL AUDIO
TO MAIN C.B.A. P4004
P8002
DVD VIDEO
DVD LUMINANCE
DVD CHROMINANCE
DVD AUDIO L CH
DVD AUDIO R CH
UNSW+12V
Q8001 (SWITCHING)
Q8002 (SWITCHING)
X8501 VSX50240
IC8502 TC74VHC125FT (BUFFER)
IC8201 S816A36AMC (REGULATOR CONTROL)
Q8203 2SB956 (+3.6V REGULATOR)
Q8204 2SB1218AR (BUFFER)
Q8205 2SB1218AR (BUFFER)
Q8206 2SB1218AR (BUFFER)
Q8200 2SB1218AR (BUFFER)
Q8201 2SB1218AR (BUFFER)
Q8202 2SB1218AR (BUFFER)
IC8200 ADV7170KSU (NTSC ENCODER)
DVD LUMINANCE LEVEL
IC8402
IC8401 AN6552S-E1 (OP AMP)
IC8403 PCM1723E-2K (AUDIO D/A CONVERTER)
D8000 MA3051-MTX
D8001 MA3051-MTX
D8002 MA3051-MTX
D8003 MA3051-MTX
SPDIF
TBCK
TSD0
TWS
TO DVD DECODER I
VOLTAGE CHART
UNLESS OTHERWISE SPECIFIED: WATTAGE OF RESISTORS IS 1/10W
LSJB3025
A B C D E F G H I J K L M N O
1 2 3 4 5 6 7 8 9 10 11 12 13

IC8502 DETAIL BLOCK DIAGRAM



14
13
12
11
10
9
8
VCC
GND
1
2
3
4
5
6
7

IC8200 DETAIL BLOCK DIAGRAM

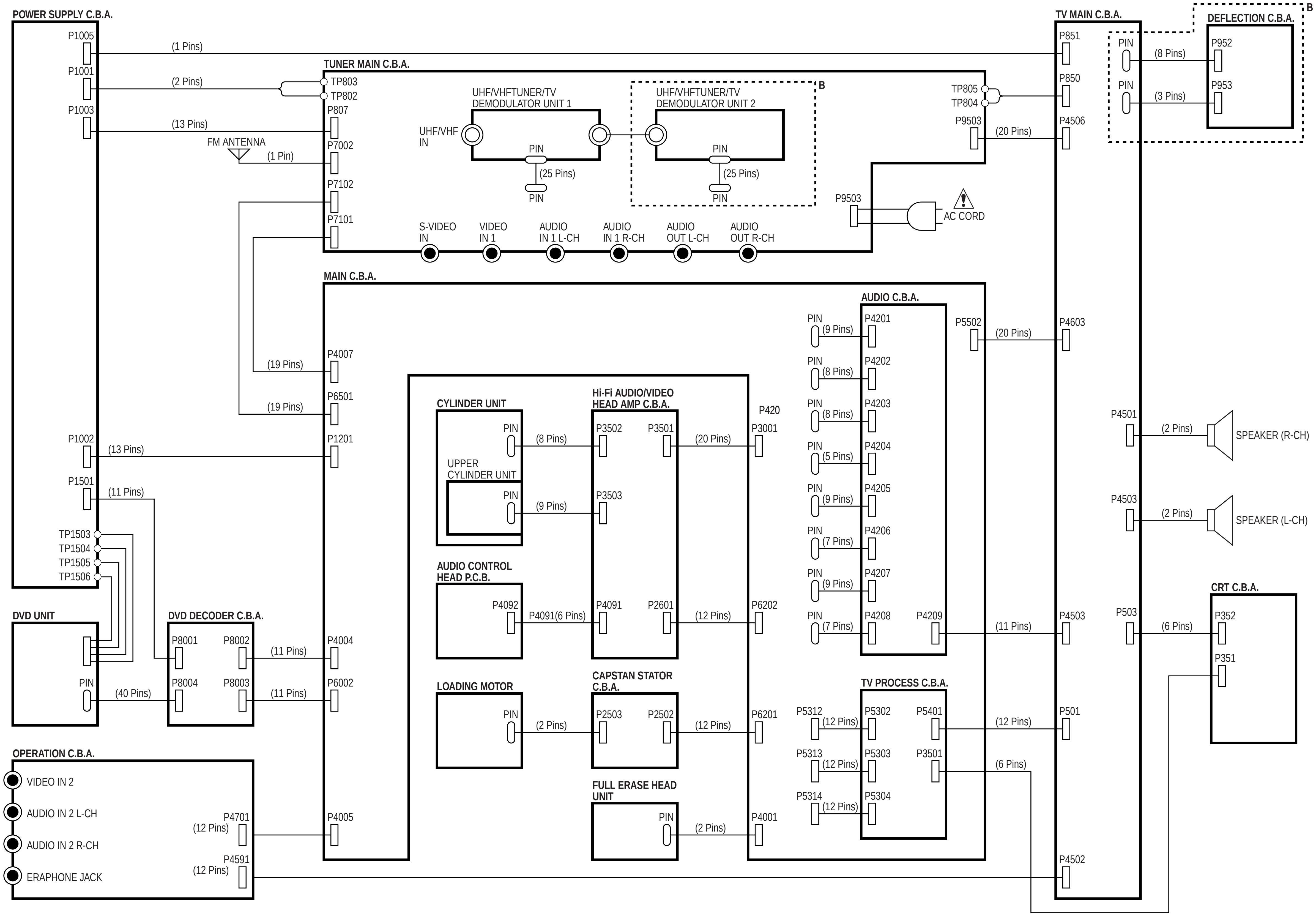


1 VCC
2
3
4
5
6
7
8
9
10 GND
11 VCC
12
13
14
15
16
17
18
19 GND
20 VCC
21 GND
22
44
GND 43
42
41
40
39
38
37
36
RTC 35
34
33
32
31
VCC 30
GND 29
VCC 28
27
26
25
24
23
INTERPOLATOR
YUV MATRIX
BURST MIX
SYNC MIX
TELE TEXT INSERTION
INTER-POLATOR
INTER-POLATOR
CGMS&WSS INSERTION
CHROMA FILTER
LUMA FILTER
VIDEO TIMING GENERATOR
RGB MATRIX
MULTI-PLEXER
DAC
DAC
DAC
VOLTAGE REFERENCE
I²C CONTROL

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z



POWER SUPPLY C.B.A.
P1005
(1 Pins)
P1001
(2 Pins)
P1003
(13 Pins)
FM ANTENNA
(1 Pin)
P1002
(13 Pins)
P1501
(11 Pins)
TP1503
TP1504
TP1505
TP1506
TUNER MAIN C.B.A.
TP803
TP802
P807
P7002
P7102
P7101
UHF/VHFTUNER/TV
DEMODULATOR UNIT 1
UHF/VHF
IN
PIN
(25 Pins)
PIN
UHF/VHFTUNER/TV
DEMODULATOR UNIT 2
B
PIN
(25 Pins)
PIN
TP805
TP804
P9503
(20 Pins)
P9503
AC CORD
S-VIDEO
IN
VIDEO
IN 1
AUDIO
IN 1 L-CH
AUDIO
IN 1 R-CH
AUDIO
OUT L-CH
AUDIO
OUT R-CH
TV MAIN C.B.A.
P851
P850
P4506
PIN
(8 Pins)
PIN
(3 Pins)
DEFLECTION C.B.A.
B
P952
P953
MAIN C.B.A.
P4007
(19 Pins)
P6501
(19 Pins)
P1201
P4004
P6002
P4005
AUDIO C.B.A.
PIN
(9 Pins)
P4201
PIN
(8 Pins)
P4202
PIN
(8 Pins)
P4203
PIN
(5 Pins)
P4204
PIN
(9 Pins)
P4205
PIN
(7 Pins)
P4206
PIN
(9 Pins)
P4207
PIN
(7 Pins)
P4208
P4209
(11 Pins)
P5502
(20 Pins)
P4603
P4501
(2 Pins)
SPEAKER (R-CH)
P4503
(2 Pins)
SPEAKER (L-CH)
P4503
P503
(6 Pins)
CRT C.B.A.
P352
P351
CYLINDER UNIT
PIN
(8 Pins)
UPPER
CYLINDER UNIT
PIN
(9 Pins)
Hi-Fi AUDIO/VIDEO
HEAD AMP C.B.A.
P3502
P3501
P3503
(20 Pins)
P420
P3001
AUDIO CONTROL
HEAD P.C.B.
P4092
P4091(6 Pins)
P4091
P2601
(12 Pins)
P6202
LOADING MOTOR
PIN
(2 Pins)
CAPSTAN STATOR
C.B.A.
P2503
P2502
(12 Pins)
P6201
FULL ERASE HEAD
UNIT
PIN
(2 Pins)
P4001
TV PROCESS C.B.A.
P5312
(12 Pins)
P5302
P5401
(12 Pins)
P501
P5313
(12 Pins)
P5303
P3501
(6 Pins)
P5314
(12 Pins)
P5304
P4502
DVD UNIT
PIN
(40 Pins)
DVD DECODER C.B.A.
P8001
P8002
(11 Pins)
P8004
P8003
(11 Pins)
OPERATION C.B.A.
VIDEO IN 2
AUDIO IN 2 L-CH
AUDIO IN 2 R-CH
ERAPHONE JACK
P4701
(12 Pins)
P4591
(12 Pins)

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ⦶ :Test point with a jumper wire across a hole in P.C.B.
   ▭→ :Test point with a component lead on the foil side.
   ▨ :Test point with no test pin.
   ● :Test point with a test pin.

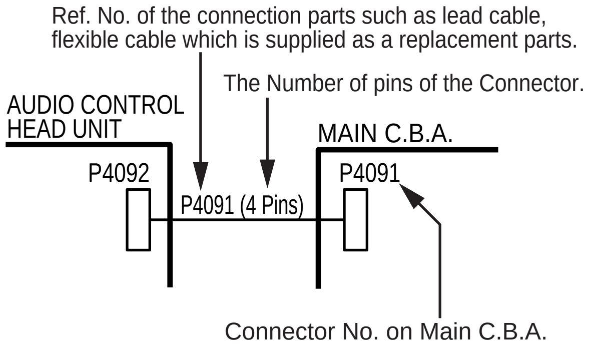
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V)......Zener Voltage

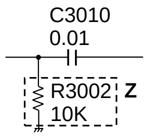
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.


Ref. No. of the connection parts such as lead cable, flexible cable which is supplied as a replacement parts.
The Number of pins of the Connector.
AUDIO CONTROL HEAD UNIT
MAIN C.B.A.
P4092
P4091 (4 Pins)
P4091
Connector No. on Main C.B.A.

3. Parts enclosed in dashed lines marked "Z" are not used in any models included in this service manual.

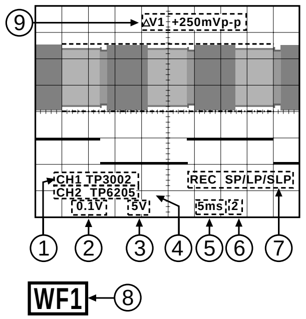
   Example:


C3010
0.01
R3002
10K
Z

4. The part number shown on this drawing is only main part number, except for safety parts. Be sure to make your orders of replacement parts according to the parts list.

Signal Waveform Note

How to read Signal Waveform


ΔV1 +250mVp-p
CH1 TP3002
CH2 TP6205
0.1V
5V
REC SP/LP/SLP
5ms
2
WF1
①
②
③
④
⑤
⑥
⑦
⑧
⑨

① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Voltage Chart Note

Voltage Measurement
a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing,
please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

Comparison chart of models & marks

MODEL	MARK
Not Used	A
PV-DF2700-K	B
Not Used	Z

Note : Refer to item 3 of Schematic Diagram Notes for mark "Z".

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (VIDEO/AUDIO SECTION)

MODE PIN NO.	STOP
IC1201	
1	0.1
2	0.1
3	0.1
IC3001	
1	5.1
2	5.3
3	2.1
4	5.2
5	2.7
6	2.5
7	0.1
8	4.5
9	2.3
10	0.1
11	0
12	0.1
13	2.8
14	0.1
15	0
16	0
17	0
18	0
19	2.7
20	0
21	0.1
22	2.1
23	2.5
24	2.5
25	2.0
26	2.5
27	2.0
28	0.1
29	1.9
30	1.8
31	2.0
32	2.4
33	2.0
34	2.8
35	2.0
36	2.6
37	0.1
38	4.5
39	2.3
40	3.5
41	2.8
42	0.1
43	3.4
44	2.6
45	2.6
46	0.1
47	0
48	1.2
49	5.1
50	3.3
51	5.1
52	2.6
53	0.1
54	2.7
55	0.1
56	4.3
57	2.6
58	2.6
59	2.5
60	0.1
61	2.5
62	0
63	0
64	2.5
65	2.6
66	2.6
67	2.6
68	5.1
69	2.6
70	0.1
71	2.5
72	2.6
73	2.6
74	0.1
75	0.1
76	0.1
77	0.1
78	0.1
79	3.0
80	2.1
81	2.5
82	2.8
83	2.6
84	2.5
IC3101	
1	2.5
2	0.1
3	0.1
4	0.1
5	2.2
6	5.1
7	1.8
8	0.1
IC3201	
1	2.7
2	5.0
3	0.1
4	2.8
5	2.9
6	2.7
7	2.1
8	2.9
IC3202	
1	0
2	1.4
3	5.1
4	1.3
5	2.5
6	3.0
7	0
8	5.1
9	2.5
10	2.5
11	0.1
12	10.7
13	1.9
14	3.7
15	2.5
16	1.3
17	0
18	2.9
19	2.5
20	5.1
IC3301	
1	0.4
2	2.6
3	4.3
4	0.1
5	4.2
6	3.1
7	5.2
8	5.2
9	0.1
10	0.1
11	0.1
12	0.1
13	5.0
14	3.5
15	3.0
16	0.1
17	4.5
18	4.2
19	0.1
20	0.1
21	0.1
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	3.2
30	2.8
31	2.8
32	0.3
33	0
34	0
35	0
36	0
37	0
38	5.2
39	5.2
40	5.2
41	5.2
42	0
43	4.0
44	4.4
45	4.5
46	0
47	0
48	0
IC7201	
1	2.5
2	0.9
3	3.9
4	0
5	0
6	0
7	1.7
8	0
IC7211	
1	2.5
2	0.9
3	2.8
4	0.9
5	2.6
6	5.1
7	1.7
8	0
IC7221	
1	2.5
2	0.8
3	2.6
4	0
5	2.9
6	5.1
7	1.7
8	0
IC7231	
1	3.1
2	0.9
3	3.1
4	0.9
5	2.8
6	5.1
7	2.3
8	0
IC7241	
1	2.5
2	0.4
3	3.9
4	0.4
5	3.9
6	5.1
7	1.8
8	0
IC7251	
1	2.5
2	0.4
3	2.9
4	0.4
5	4.0
6	5.1
7	1.7
8	0
IC7261	
1	2.5
2	0.3
3	2.6
4	0
5	0
6	5.1
7	1.8
8	0
Q3001	
E	1.7
C	0
B	1.0
Q3002	
E	2.9
C	4.7
B	3.5
Q3003	
E	0
C	0
B	5.1
Q3071	
E	2.1
C	5.1
B	2.8
Q3202	
E	0
C	0
B	2.9
Q3203	
E	0
C	3.0
B	0.4
Q3310	
E	0
C	4.4
B	0
Q3311	
E	2.4
C	0
B	1.8
Q3316	
E	0
C	5.2
B	0
Q3601	
E	5.0
C	12.1
B	5.7
Q3602	
E	5.1
C	12.1
B	5.7
Q3603	
E	3.3
C	4.0
B	4.0
Q3604	
E	8.5
C	12.1
B	9.1
Q4001	
E	5.1
C	0
B	4.3
Q4002	
E	0
C	0
B	0.8
Q4003	
E	0
C	0
B	0.8
Q4101	
E	0
C	0.6
B	0.5
Q4171	
E	0
C	0
B	0
Q4173	
E	0
C	0.5
B	0
Q7231	
E	0
C	5.1
B	0.4
TP1201	9.1
TP3001	1.7
TP3002	2.8
TP3003	3.4
TP3004	2.0
TP3005	5.1
TP3006	2.6
TP3007	2.8
TP3008	2.4
TP3009	8.6
TP3010	3.0
TP3011	2.7
TP3012	0
TP3013	8.5
TP3019	2.9
TP3212	2.9
TP3301	3.5
TP4001	0
TP4002	0
TP4003	0
TP4004	0
TP4011	0
TP4014	0

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (SYSTEM CONTROL/SERVO SECTION)

MODE / PIN NO.	REC	PLAY
IC2601		
1	14.2	14.2
2	14.2	14.2
3	14.7	14.7
4	1.1	1.1
5	5.1	5.2
6	0.8	0.9
7	0.9	1.0
8	0.6	0.7
9	2.7	2.7
10	1.5	1.5
11	0	0.1
12	3.8	3.9
13	3.8	3.9
14	3.8	3.9
15	0	0.1
16	14.2	14.2
IC6001		
1	4.9	5.0
2	2.9	2.9
3	4.3	3.2
4	0.2	0.3
5	2.9	2.9
6	5.0	5.1
7	4.2	4.2
8	3.3	3.3
9	5.0	5.1
10	2.6	2.6
11	0	0.1
12	0	0.1
13	0	0.1
14	4.8	4.9
15	4.3	3.3
16	4.8	4.9
17	4.7	4.4
18	4.9	4.9
19	2.5	2.7
20	4.9	5.0
21	0	0.1
22	2.4	2.2
23	2.5	2.6
24	0	0.1
25	---	---
26	2.5	2.6
27	0	2.6
28	0	0.1
29	5.0	0.1
30	1.2	0.4
31	1.6	1.7
32	0	0
33	0	0
34	0	2.5
35	0	0
36	0	5.1
37	0	0
38	0	2.5
39	0	2.5
40	0	0
41	0	5.1
42	0	2.6
43	4.4	4.4
44	4.8	4.9
45	0	2.1
46	0	0
47	3.8	3.0
48	0	0
49	0	0
50	0	0
51	5.0	5.1
52	0	0
53	0	0
54	0	0
55	0	5.0
56	0	4.8
57	5.0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	5.0	5.1
64	3.3	3.4
65	1.1	1.2
66	2.4	3.1
67	2.5	2.6
68	0	0
69	0	2.6
70	2.5	2.6
71	0	0
72	0	2.6
73	0	5.1
74	2.9	2.7
75	2.1	2.7
76	2.5	2.7
77	0.6	0
78	0	0
79	0	0
80	0	0
81	0	0
82	0	0
83	---	---
84	0	5.2
85	4.8	4.9
86	4.8	0
87	4.8	0
88	0	0
89	3.4	---
90	5.0	5.1
91	4.2	3.0
92	4.2	3.0
93	0	0
94	0	0
95	0	0
96	3.9	4.2
97	0	0
98	0	2.2
99	4.9	5.1
100	2.5	2.5
IC6002		
1	0	0
2	1.2	1.3
3	1.2	1.3
4	---	---
IC6003		
1	1.2	1.3
2	2.3	2.4
3	0	0
4	0	3.6
IC6004		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.7	4.8
6	4.8	5.0
7	0	0
8	5.1	5.2
IC6005		
1	5.1	5.2
2	1.4	1.4
3	1.2	1.3
4	0	0
5	4.9	5.0
IC6501		
1	0	0
2	4.5	3.2
3	4.9	5.0
4	2.5	2.7
5	3.8	4.0
6	0	0
7	0	0
8	0	0
9	5.1	0
10	0	0
11	4.8	4.2
12	0	5.2
13	3.9	2.9
14	0	0
15	4.4	3.4
16	4.5	3.5
17	4.2	3.0
18	2.5	2.7
19	5.1	5.2
20	5.1	5.2
21	5.1	0
22	4.6	0
23	0.5	0
24	0	0.3
25	0.2	0.3
26	---	1.2
27	0	1.3
28	2.8	2.9
29	1.9	1.2
30	4.4	4.0
31	4.4	3.8
32	3.2	4.1
33	2.8	3.1
34	0.1	0.1
35	3.4	4.1
36	0	0
37	0	0
38	0	0
39	0	0
40	3.5	4.0
41	3.5	3.7
42	0	0
Q6001		
E	12.1	12.2
C	11.9	0.6
B	11.3	12.3
Q6002		
E	4.4	0
C	11.3	12.2
B	5.0	0
Q6003		
E	0	0
C	0.1	0.2
B	0.6	0.6
Q6004		
E	5.0	5.1
C	5.0	5.1
B	4.3	4.4
Q6005		
E	5.1	5.2
C	5.0	5.1
B	4.3	4.3
Q6006		
E	0	0
C	5.0	0
B	0	0
Q6007		
E	3.7	3.3
C	4.8	4.9
B	0	0
Q6008		
E	3.4	3.5
C	4.3	4.4
B	0	0
Q6009		
E	0.1	0.1
C	5.0	5.0
Q6010		
E	0.1	0.1
C	4.8	5.1
Q6011		
E	5.1	5.1
C	0	0
B	0	0
Q6012		
E	5.1	4.6
C	0.1	0.1
B	0.1	0.1
Q6013		
E	2.0	2.0
C	5.2	5.2
B	1.9	1.9
Q6201		
E	2.5	2.5
C	0	0.1
B	0.1	0.1
Q6501		
E	5.0	5.0
C	0.1	0.1
B	5.0	5.0
TP6001	5.0	5.0
TP6002	4.2	4.9
TP6003	3.5	3.0
TP6005	3.5	3.3
TP6008	0.1	0.1
TP6009	5.2	5.2
TP6013	2.6	2.6
TP6021	0.1	0.1
TP6022	3.8	3.7
TP6023	0.1	0.1
TP6099	5.0	5.0
TP6201	2.3	2.3
TP6202	2.5	2.5
TP6203	2.6	2.6
TP6204	1.2	1.2
TP6205	2.6	2.6
TP6206	3.0	2.5
TP6207	2.6	2.5
TP6208	2.6	2.7
TP6209	2.4	2.4
TP6211	2.7	2.6

CAPSTAN STATOR C.B.A.

MODE / PIN NO.	REC	PLAY
P2502		
1	13.6	13.6
2	5.2	5.2
3	5.3	5.3
4	2.5	2.4
5	0	0
6	2.6	2.6
7	0	0
8	0.5	0.5
9	2.6	2.6
10	0.1	0.1
11	0	0
12	0	0
P2503		
1	1.8	1.7
2	1.8	1.7

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

TV PROCESS C.B.A.

MODE PIN NO.	STOP
IC5101	
1	0
2	4.8
3	0
4	0
5	0
6	0
7	0
8	5.1
9	5.0
10	5.0
11	0
12	2.5
13	0
14	2.6
15	2.6
16	3.4
17	3.4
18	2.3
19	0
20	2.4
21	1.5
22	0.6
23	4.8
24	1.4
25	2.4
26	2.4
27	3.4
28	0.7
IC5201	
1	1.1
2	1.6
3	0.6
4	0
5	0
6	3.3
7	3.3
8	1.0
9	1.6
10	0.6
11	0
12	0
13	3.3
14	0
15	3.4
16	0
17	0
18	0.4
19	0
20	0.4
21	0
22	3.5
23	3.5
24	0
25	3.3
26	0.3
27	0
28	0
29	0
30	0
31	0.2
32	0.2
33	0
34	3.3
35	3.4
36	0
37	0
38	0
39	0
40	1.4
41	0
42	0
43	0
44	1.1
45	3.3
46	0
47	0
48	0
49	0
50	0
51	1.0
52	0
53	0
54	0
55	0
56	0
57	0
58	0
59	0
60	0
61	0
62	3.4
63	3.3
64	3.4
IC5202	
1	4.8
2	0
3	3.4
IC5301	
1	0
2	2.3
3	1.4
4	3.9
5	0
6	6.2
7	4.3
8	0
9	6.4
10	5.0
11	0
12	5.0
13	2.3
14	1.4
15	0.6
16	9.1
17	3.0
18	5.5
19	9.1
20	6.4
21	2.9
22	5.8
23	0
24	6.5
25	0
26	2.7
27	2.2
28	0.6
29	1.6
30	1.7
31	0.5
32	0.4
33	0.1
34	0
35	3.0
36	3.0
37	2.3
38	2.8
39	0
40	3.4
41	4.9
42	3.5
43	3.3
44	2.1
45	5.1
46	2.8
47	0.3
48	3.9
49	4.7
50	4.2
51	1.3
52	3.7
53	0
54	2.9
55	2.3
56	0
57	2.4
58	5.9
59	0
60	0.4
61	0.4
62	4.2
63	4.4
64	2.2
IC5303	
1	0
2	7.4
3	5.0
IC5401	
1	1.4
2	0
3	0
4	0
5	5.1
6	5.1
7	5.9
8	12.2
Q5007	
E	0
C	0
B	0
Q5008	
E	0
C	0
B	1.4
Q5010	
E	2.1
C	0
B	1.4
Q5011	
E	3.6
C	5.9
B	3.0
Q5012	
E	6.5
C	0
B	5.9
Q5013	
E	0.2
C	1.0
B	0.2
Q5101	
E	1.7
C	0.5
B	2.2
Q5104	
E	6.6
C	9.1
B	6.0
Q5105	
E	1.7
C	0
B	2.4
Q5107	
E	0
C	4.8
B	1.7
Q5108	
E	0
C	0
B	1.3
Q5109	
E	0
C	0
B	0
Q5110	
E	6.0
C	0
B	0.5
Q5114	
E	1.4
C	0
B	2.1
Q5118	
E	1.5
C	0
B	1.7
Q5119	
E	1.7
C	0
B	2.3
Q5122	
E	0
C	0.3
B	2.4
Q5123	
E	4.1
C	7.3
B	3.4
Q5124	
E	7.3
C	9.1
B	4.3
Q5201	
E	0
C	5.0
B	0
Q5202	
E	2.8
C	3.4
B	4.9
Q5203	
E	3.0
C	3.6
B	5.0
Q5204	
E	0.8
C	0
B	0
Q5205	
E	0.7
C	0.2
B	0
Q5206	
E	3.3
C	0
B	2.7
Q5207	
E	2.5
C	5.1
B	2.0
Q5208	
E	5.1
C	0.5
B	4.8
Q5209	
E	0
C	0.8
B	0
Q5210	
E	0
C	0
B	1.0
Q5214	
E	1.6
C	0
B	1.0
Q5218	
E	0
C	0
B	0.8
Q5301	
E	0.9
C	2.8
B	0.4
Q5302	
E	0.4
C	0
B	1.0
Q5303	
E	0
C	2.8
B	0
Q5304	
E	0
C	0
B	0.7
Q5305	
E	1.6
C	0
B	2.2
Q5306	
E	1.2
C	0
B	1.2
Q5501	
E	5.4
C	9.1
B	5.9
Q5551	
E	0.9
C	0
B	0.2
Q5601	
E	3.5
C	0
B	4.1
Q5901	
E	0
C	0
B	2.0
Q5902	
E	3.6
C	6.7
B	3.0
Q5903	
E	0
C	0.3
B	7.2
Q5904	
E	0.2
C	12.2
B	1.5
Q5906	
E	1.1
C	0
B	0.5
Q5907	
E	1.1
C	2.7
B	3.6
TP5203	0
TP5204	0.4
TP5206	0.8
TP5207	0
TP5301	6.4
TP5302	5.7
TP5303	6.5
TP5304	2.7
TP5305	1.6
TP5306	3.0
TP5307	3.0
TP5308	2.2
TP5312	1.6
TP5807	9.1
TP5901	0

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

TV MAIN C.B.A.

MODE PIN NO.	STOP
IC752	
1	3.0
2	3.7
3	3.7
4	0
5	5.3
6	0.1
7	6.9
8	12.1
IC850	
1	2.0
2	0.2
3	124.9
4	17.0
5	0
IC851	
1	0.2
2	20.1
3	2.7
4	2.4
IC852	
1	140.7
2	20.1
3	0
IC4601	
1	0.1
2	4.5
3	4.5
4	4.5
5	4.5
6	4.5
7	0
8	0
9	0
10	5.0
11	4.9
12	1.1
13	1.1
14	2.7
15	2.7
16	8.9
17	4.5
18	4.5
19	4.5
20	4.5
21	4.5
22	0
Q401	
E	0
C	0
B	0.3
Q501	
E	0
C	80.1
B	0.4

MODE PIN NO.	STOP
Q511	
E	17.1
C	0
B	16.8
Q512	
E	-17.2
C	20.3
B	-16.9
Q555	
E	140.8
C	0
B	140.5
Q751	
E	0.1
C	23.4
B	0.6
Q753	
E	7.4
C	0.6
B	6.9
Q903	
E	0
C	125.1
B	-0.1
Q904	
E	5.1
C	15.9
B	5.5
Q905	
E	16.0
C	210.1
B	16.1
Q906	
E	47.7
C	140.4
B	40.3
Q907	
E	46.2
C	140.4
B	47.6
Q908	
E	0.9
C	11.3
B	1.3
Q4501	
E	0.2
C	0
B	-0.5
Q4502	
E	0
C	0
B	-0.6
Q4503	
E	21.3
C	22.0

MODE PIN NO.	STOP
B	22.0
TP501	140.4
TP502	0.1
TP503	140.8
TP551	-2.4
TP552	-19.6
TP553	0.1
TP554	23.7
TP555	2.5
TP556	213.5
TP558	17.1
TP559	-17.2
TP751	3.0
TP851	17.1
TP852	-17.2
TP853	22.0
TP854	0
TP855	0.3
TP901	210.2
TP4501	22.0
TP4502	0
TP4504	0
TP4505	0
TP4506	2.4
TP4507	1.3

DEFLECTION C.B.A.

MODE PIN NO.	STOP
IC901	
1	0
2	7.3
3	12.2
4	0
5	4.8
6	2.8
7	9.5
8	0
9	4.3
10	7.8
11	2.8
12	0
13	12.2
14	5.6
15	0
16	12.2
IC902	
1	0.2
2	0
3	5.2
4	-5.0
5	0.4
6	0
7	0
8	0
IC903	
1	0
2	0.2
3	0
4	-15.3
5	0
6	0
7	0
8	12.2
IC951	
1	5.9
2	5.7
3	0
4	0
5	0
6	0
7	0
8	4.5
9	4.4
10	0
Q901	
E	0.2
C	6.0
B	0
Q902	
E	0
C	1.2
B	0.6

MODE PIN NO.	STOP
Q951	
E	0
C	0
B	0

TUNER MAIN C.B.A.

MODE PIN NO.	STOP
IC9551	
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	5.1
Q591	
E	0
C	12.2
B	0
Q801	
E	0
C	0.2
B	0.8
Q7001	
E	2.2
C	0
B	1.5
Q7101	
E	2.2
C	0
B	1.5
Q9501	
E	5.1
C	12.1
B	5.7
Q9502	
E	5.1
C	12.1
B	5.7
Q9503	
E	3.3
C	9.4
B	3.9
Q9504	
E	8.6
C	12.1
B	9.2
TP802	120.0
TP803	120.0
TP804	160.0
TP805	0
TP9501	0
TP9502	0
TP9551	0
TP9552	0
TP9553	0
TP9554	0

POWER SUPPLY C.B.A.

MODE PIN NO.	STOP
IC1001	
1	5.2
2	4.2
3	6.6
4	2.0
IC1002	
1	2.6
2	0
3	4.2
IC1502	
1	0
2	0
3	0
4	0.5
IC1503	
1	0
2	0
3	0
IC1504	
1	0
2	0
3	0
4	0
5	0
6	0.2
7	0
8	0
IC1505	
1	0
2	0
3	0
Q1001	
E	0
C	132.4
B	0.3
Q1051	
E	12.2
C	15.0
B	12.8
Q1002	
E	0
C	0.3
B	0.6
Q1052	
E	0
C	12.8
B	0.7
Q1053	
E	5.1
C	5.2
B	5.9
Q1054	
E	5.1
C	5.2

MODE PIN NO.	STOP
B	5.9
Q1070	
E	12.2
C	11.9
B	11.6
Q1071	
E	6.4
C	-6.4
B	-5.7
Q1501	
E	0
C	12.2
B	0
Q1502	
E	0
C	0.5
B	0
Q1503	
E	0
C	1.0
B	0.5
Q1504	
E	10.7
C	13.2
B	0
Q1505	
E	0
C	0
B	0

AUDIO C.B.A.

MODE PIN NO.	STOP
IC4201	
1	2.6
2	2.5
3	2.5
4	2.5
5	2.5
6	5.1
7	2.6
8	1.6
9	0
10	2.6
11	2.6
12	2.6
13	2.3
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	2.6
26	2.6
27	2.6
28	0
29	1.6
30	0
31	0
32	0
33	0
34	0
35	2.5
36	0
37	2.5
38	2.6
39	12.2
40	0
41	6.1
42	0
43	0
44	0
45	6.1
46	6.1
47	0
48	0
IC4301	
1	0
2	0
3	0
4	0
5	0

MODE PIN NO.	STOP
6	0
7	6.4
8	0
9	0
10	0
11	0
12	15.0
13	16.0
14	0
IC4302	
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	5.1
IC4303	
1	0
2	0
3	0
4	0
5	0
6	0
7	-6.4
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	5.1
IC4351	
1	0
2	0
3	0
4	0
5	6.1
6	0
7	0
8	0
9	10.5
10	12.2
11	10.4
12	4.2
13	5.0
14	5.0
15	0
16	12.2
IC4352	
1	0
2	0

MODE PIN NO.	STOP
3	0
4	0
5	6.1
6	6.1
7	6.1
8	12.2
IC9001	
1	3.8
2	4.1
3	2.9
4	9.1
5	1.4
6	0
7	3.4
8	4.5
9	1.3
10	3.5
11	4.6
12	4.6
13	4.2
14	4.2
15	4.0
16	4.2
17	0
18	0.7
19	4.2
20	4.1
21	1.8
22	4.2
23	4.2
24	4.2
25	4.2
26	1.8
27	4.2
28	4.1
29	4.2
30	4.1
IC9101	
1	4.2
2	4.1
3	3.1
4	9.1
5	1.4
6	0
7	4.2
8	4.7
9	1.4
10	7.0
11	5.2
12	5.2
13	4.2
14	0.6
15	0.6
16	4.2
17	0

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

DVD DECODER C.B.A.

MODE PIN NO.	STOP
18	0.2
19	4.2
20	4.1
21	1.8
22	4.2
23	4.2
24	4.2
25	4.2
26	1.9
27	4.2
28	4.1
29	4.2
30	4.2
IC9201	
1	2.9
2	3.6
3	5.1
4	4.4
5	0
6	5.1
7	4.4
8	3.0
9	3.1
Q4351	
E	12.8
C	15.0
B	12.2
Q4352	
E	0
C	12.2
B	6.1
Q4353	
E	0
C	12.2
B	0
Q4354	
E	12.2
C	12.2
B	0
Q4355	
E	0
C	0
B	3.7
Q9001	
E	0.6
C	0
B	1.2
Q9002	
E	0
C	0
B	0.4
Q9101	
E	1.3
C	0.6
B	0.6
Q9102	
E	0.4
C	0
B	0
TP4201	0
TP4202	0
TP4205	0
TP4206	0
TP4207	0
TP4208	0
TP9001	0
TP9002	0
TP9003	0
TP9101	0.4
TP9102	0.4
TP9103	0
TP9201	0.6
IC8000	
1	3.6
2	1.5
3	1.3
4	1.2
5	1.4
6	1.2
7	1.4
8	0
9	3.6
10	1.9
11	1.3
12	0.3
13	0.2
14	1.2
15	1.7
16	1.7
17	0
18	3.6
19	1.0
20	0.2
21	1.2
22	0
23	0
24	3.6
25	0.1
26	0
27	3.6
28	2.8
29	2.6
30	2.7
31	0.1
32	0.1
33	1.9
34	0
35	0.7
36	0.4
37	0.4
38	0.4
39	0.4
40	0.4
41	0.4
42	0.4
43	0
44	0.7
45	0.4
46	0.4
47	0.4
48	0.3
49	0.5
50	0.3
51	0.7
52	0
53	0.5
54	0.5
55	0.5
56	0.5
57	0.5
58	0.5
59	0.7
60	0
61	0.5
62	0.5
63	0.5
64	0.5
65	0.4
66	0.4
67	0
68	0.7
69	0.5
70	0.5
71	0.5
72	0.5
73	0.5
74	0.5
75	0.7
76	0
77	0.4
78	0.4
79	0.4
80	0.4
81	0.4
82	0.4
83	0.7
84	0
85	0.4
86	0.4
87	0.4
88	0.4
89	0.4
90	0.4
91	0
92	0.7
93	0.3
94	0.3
95	0.3
96	0.3
97	0.4
98	0
99	0.7
100	0.4
101	0.4
102	0.4
103	0
104	0.7
105	0.4
106	0.4
107	0.4
108	0.4
109	0.4
110	0.4
111	0
112	0
113	0.4
114	0.3
115	0.3
116	0.5
117	0.4
118	0.3
119	0.3
120	0
121	0.7
122	0.4
123	0.4
124	0.4
125	0.4
126	0.4
127	0.4
128	0.4
129	0
130	0.7
131	0.4
132	0.8
133	0.4
134	0.4
135	0.4
136	0.4
137	0.4
138	0
139	0.7
140	0.4
141	0.4
142	0.3
143	0.3
144	0.2
145	0.3
146	0.5
147	0
148	0.7
149	0.4
150	0.4
151	0.4
152	0.8
153	0.3
154	0.4
155	0.4
156	0
157	0.7
158	0.4
159	0.5
160	0.4
161	0.4
162	0.4
163	0
164	0.7
165	0.4
166	1.2
167	0.4
168	1.1
169	0.4
170	0.3
171	0
172	0.7
173	0.3
174	0.3
175	0.3
176	0
177	0
178	0.4
179	0.4
180	0.4
181	0.4
182	0.4
183	0.7
184	0
185	0.4
186	0.4
187	0.4
188	0.4
189	0.4
190	0.4
191	0.4
192	0
193	0.7
194	0.4
195	0.4
196	0.4
197	0.4
198	0.3
199	0.3
200	0
201	0.7
202	0.7
203	0.1
204	0.3
205	0.3
206	0.4
207	0.4
208	0
IC8001	
1	0
2	0
3	0
4	0
5	0.4
6	0.4
7	0
8	0.5
IC8002	
1	0
2	0.4
3	0.4
4	0.4
5	0.3
6	0.3
7	0.4
8	0.4
9	0.3
10	0
11	0.3
12	0.3
13	0.4
14	0.4
15	0.3
16	0.3
17	0.4
18	0.4
19	0.2
20	0.5
IC8003	
1	0.6
2	0
3	0.5
4	0.5
5	0.7
IC8100	
1	0.7
2	0.4
3	0.4
4	0
5	0.4
6	0.4
7	0.7
8	0.4
9	0.4
10	0
11	0
12	0
13	0.7
14	0.1
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0.7
26	0
27	0.5
28	0.5
29	0.4
30	0.4
31	0.5
32	-0.5
33	-0.4
34	0.7
35	0.5
36	0.4
37	-0.6
38	-0.6
39	0.4
40	0.4
41	0
42	0.4
43	0.4
44	0
45	0.4
46	0.4
47	0
48	0.5
49	0.5
50	0
IC8101	
1	0.7
2	0.4
3	0.4
4	0
5	0.4
6	0.4
7	0.7
8	0.4
9	0.4
10	0
11	0.5
12	0.5
13	0.7
14	0.5
15	0.5
16	0.5
17	0.4
18	0.4
19	0.5
20	0.5
21	0.5
22	0.5
23	0.4
24	0.5
25	0.7
26	0
27	0.5
28	0.5
29	0.4
30	0.4
31	0.5
32	0.5
33	0.1
34	0.7
35	0.4
36	0.4
37	0.1
38	0.7
39	0.4
40	0.4
41	0
42	0.3
43	0.4
44	0.7
45	0.3
46	0.3
47	0
48	0.3
49	0.3
50	0
IC8200	
1	0.4
2	0.3
3	0.3
4	0.3
5	0.2
6	0
7	0
8	0
9	0
10	0
11	0.4
12	0
13	0
14	0
15	0.3
16	0.3
17	0.4
18	0
19	0
20	0.4
21	0
22	0.1
23	0.4
24	0.4
25	0.2
26	0
27	0
28	0.4
29	0
30	0.4
31	0
32	0.3
33	0.1
34	0
35	0
36	0.3
37	0.3
38	0.3
39	0.3
40	0.3
41	0.3
42	0.4
43	0
44	0.4
IC8201	
1	0.6
2	0
3	0.5
4	0.5
5	0.4
IC8301	
1	0.5
2	0.5
3	0.5
4	0.4
5	0.5
6	0.5
7	0.4
8	0.5
9	0.5
10	0.5
11	0.5
12	0.5
13	0.4
14	0.5
15	0.5
16	0.5
17	0.5
18	0.4
19	0.5
20	0.4
21	0.4
22	0.4
23	0.4
24	0
25	0.4
26	0.4
27	0.3
28	0.1
29	0.4
30	0.3
31	0.5
32	0.3
IC8303	
1	0.1
2	0.5
3	0
4	0.2
5	0.2
IC8401	
1	6.1
2	6.1
3	6.1
4	0
5	6.1
6	6.1
7	6.1
8	12.2
IC8403	
1	0.4
2	0.4
3	0.5
4	0.1
5	0.3
6	0.3
7	0.3
8	0.3
9	0.3
10	0.3
11	0.1
12	0
13	0.5
14	0
15	0.3
16	0.4
17	0.4
18	0.4
19	0.1
20	0.3
21	0.5
22	0
23	0
24	0
IC8502	
1	0
2	0.3
3	0.5
4	0
5	0.3
6	0.5
7	0
8	0.3
9	0.3
10	0
11	0.4
12	0.3
13	0
14	0
Q8000	
E	0.7
C	0.7
B	0.5
Q8200	
E	0.1
C	0
B	0.5

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MODE PIN NO.	STOP
Q8201	
E	0.3
C	0
B	0.2
Q8202	
E	0.3
C	0.1
B	0.5
Q8203	
E	0.6
C	0.4
B	0.5
Q8204	
E	0
C	0
B	0.1
Q8205	
E	0.1
C	0
B	0.4
Q8206	
E	0
C	0
B	0
TP8000	0.4
TP8001	0.1
TP8002	0
TP8003	0.4
TP8004	0.4
TP8005	0.3
TP8006	0.5
TP8007	0.1
TP8008	0.2
TP8009	0.3
TP8010	0.2
TP8011	0.2
TP8012	0.5
TP8013	0.7
TP8014	0
TP8015	0.4
TP8016	0
TP8017	0
TP8018	0.4
TP8019	4.4
TP8020	0.4
TP8022	0.5
TP8023	0.1
TP8025	0.2
TP8026	0.4
TP8027	0.1
TP8028	0
TP8029	0
TP8030	0.4
TP8031	0.3

MODE PIN NO.	STOP
TP8032	0.3
TP8033	0.3
TP8034	0.4
TP8035	0.4
TP8036	0.4
TP8037	0.1
TP8038	0
TP8039	0.1
TP8040	0.4
TP8041	0.4
TP8042	0.4
TP8043	0
TP8044	0.4
TP8045	0
TP8046	0.1
TP8047	0
TP8048	0
TP8049	0
TP8051	0.6
TP8052	0.4
TP8053	0.1
TP8054	0.1
TP8055	0.3
TP8056	0.1
TP8057	0.1
TP8058	0.1
TP8059	0.1
TP8060	0.1
TP8061	0.1
TP8062	0.4
TP8063	0.4
TP8065	0.1
TP8066	0.1
TP8067	0.5
TP8068	0.5
TP8069	0
TP8070	0.1
TP8071	0.1
TP8072	0.1
TP8100	0.7
TP8201	0
TP8202	0.5
TP8203	0.1
TP8204	0.1
TP8205	0.4
TP8206	0.1
TP8207	0.1
TP8208	0.1
TP8210	0.4
TP8211	0.4
TP8212	0.4
TP8213	0.4
TP8214	0.1
TP8215	0.1
TP8216	0.1

MODE PIN NO.	STOP
TP8300	0
TP8301	0.1
TP8302	0.4
TP8303	0.3
TP8304	0.4
TP8305	0.4
TP8306	0.4
TP8307	0.4
TP8308	0.4
TP8309	0.4
TP8310	0.4
TP8311	0.1
TP8312	0.3
TP8313	0.3
TP8314	0.3
TP8315	0.1
TP8316	0
TP8317	0
TP8318	0.1
TP8319	0
TP8320	0
TP8321	0.5
TP8322	0
TP8323	0.5
TP8324	0.5
TP8325	0.1
TP8326	0
TP8327	0.1
TP8328	0
TP8329	0.4
TP8330	0.1
TP8331	0.1
TP8332	0
TP8333	0.1
TP8334	0
TP8335	0.1
TP8400	0.1
TP8401	0.1
TP8405	0
TP8407	0
TP8408	0.1
TP8415	0.3
TP8416	0.2
TP8417	0
TP8418	0
TP8419	0
TP8420	0
TP8421	0.4
TP8422	0.4
TP8423	0
TP8424	0
TP8501	0.3
TP8502	0.1
TP8503	0.1
TP8504	0.4

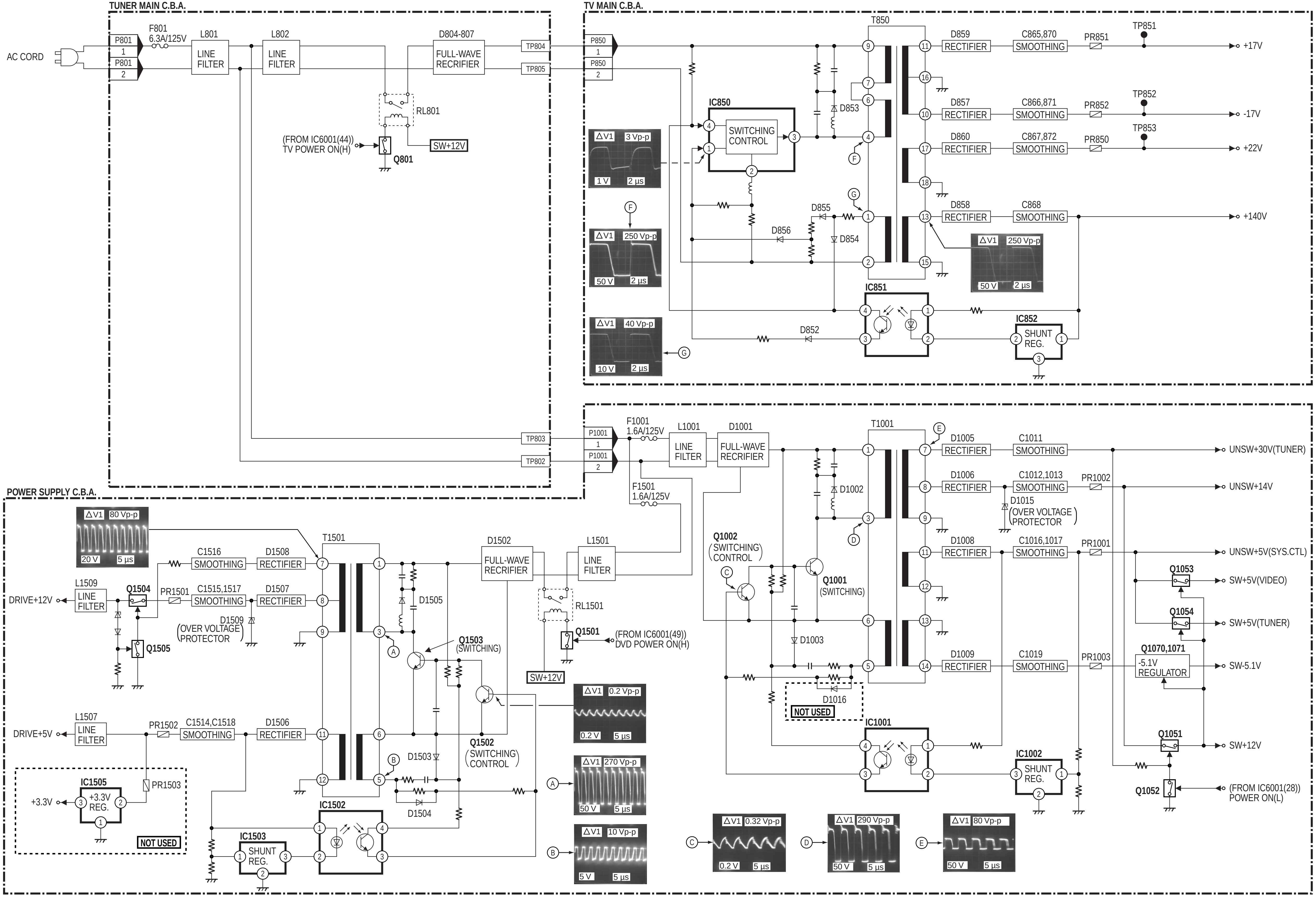
MODE PIN NO.	STOP
TP8505	0.1
TP8506	0.3

CRT C.B.A.

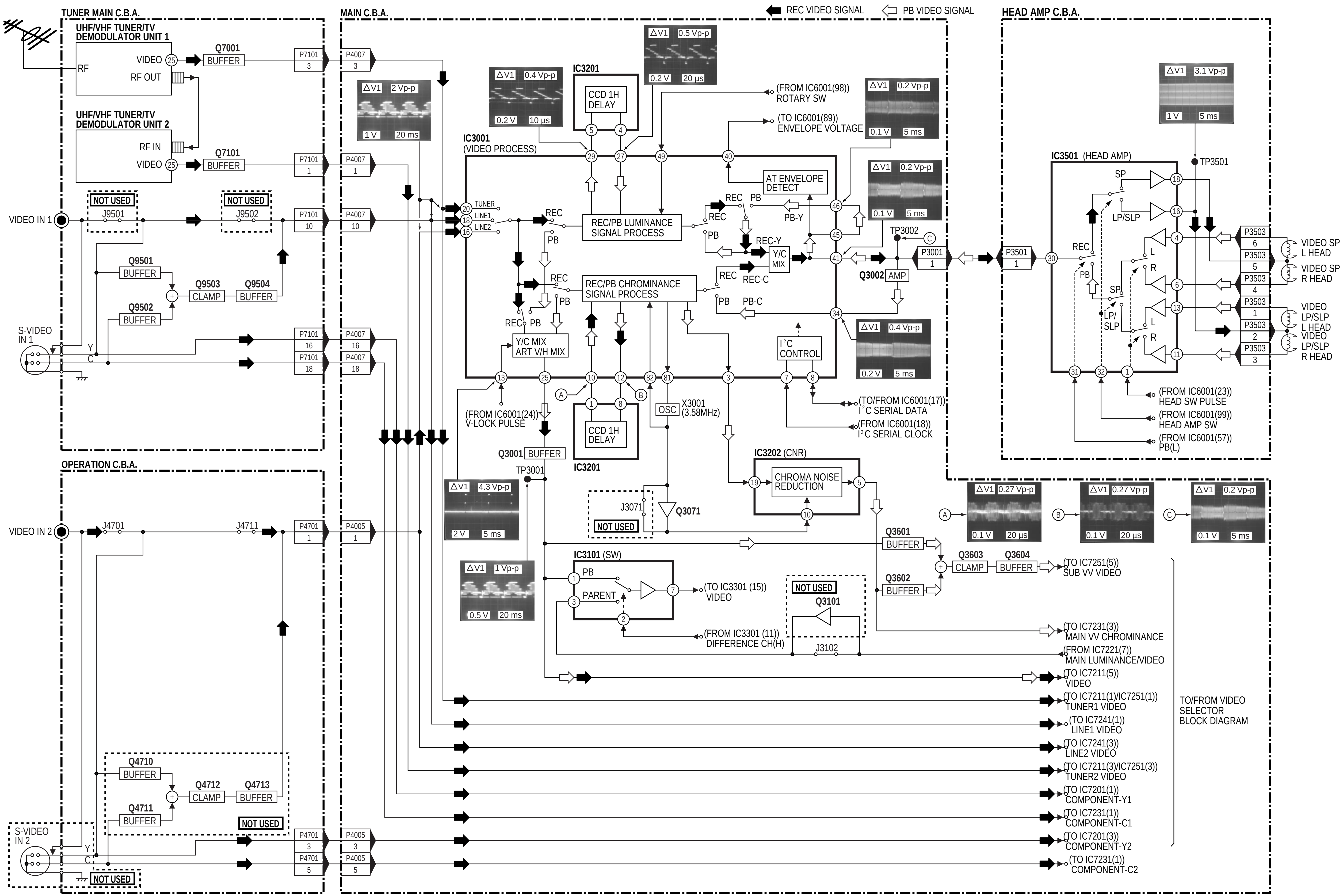
MODE PIN NO.	STOP
Q5051	
E	2.1
C	9.1
B	2.8
Q5052	
E	-2.2
C	2.5
B	-1.6
Q5053	
E	2.6
C	9.1
B	3.2
Q5054	
E	2.5
C	-3.0
B	1.9
Q5057	
E	3.2
C	-3.0
B	2.5
Q5058	
E	1.9
C	9.1
B	2.5
Q5061	
E	-3.0
C	0
B	-2.8
Q5062	
E	2.8
C	9.1
B	3.4
TP46	0
TP47	-3.0
TP48	0
TP49	0
TP50	162.8

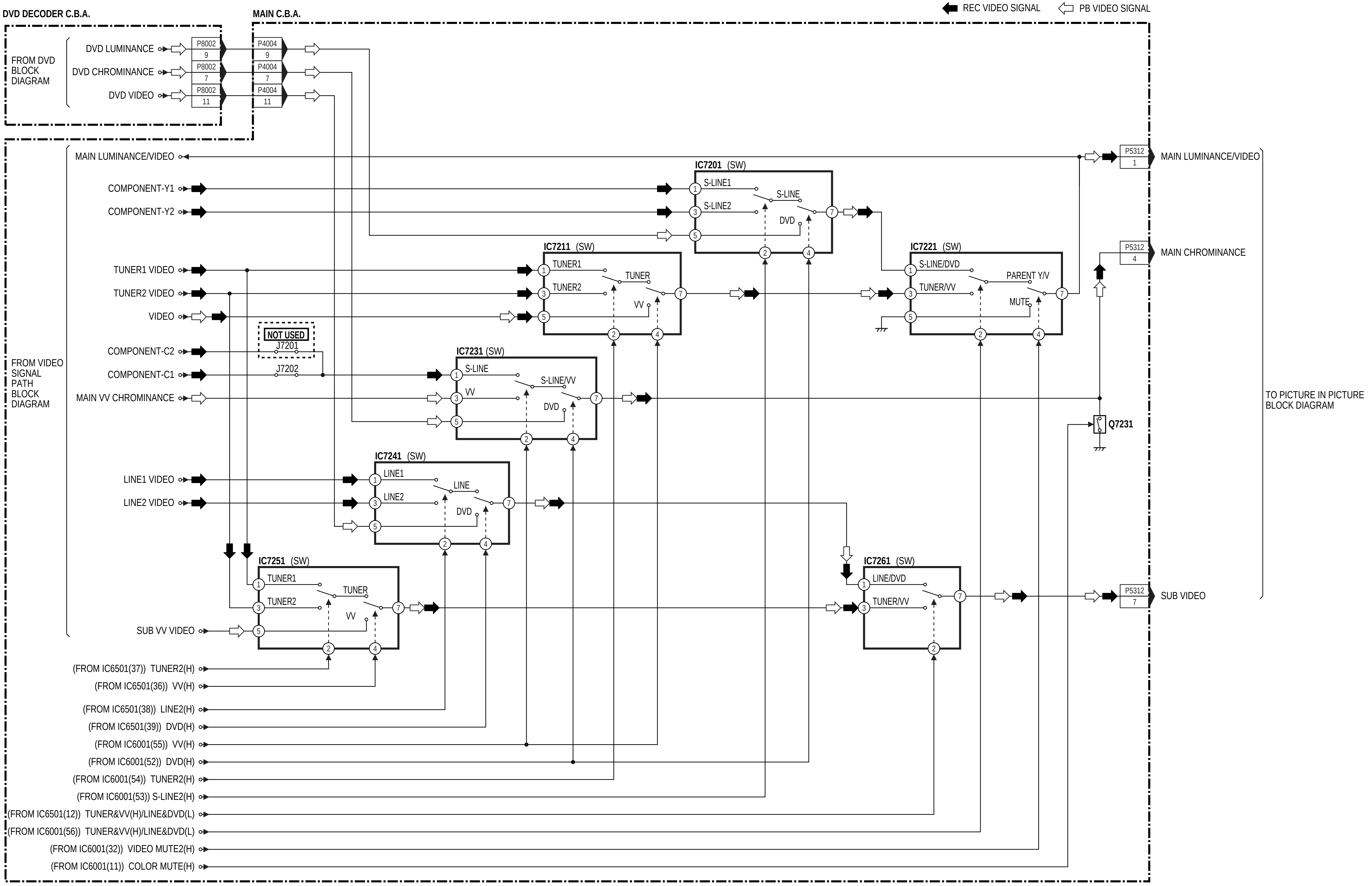
OPERATION C.B.A.

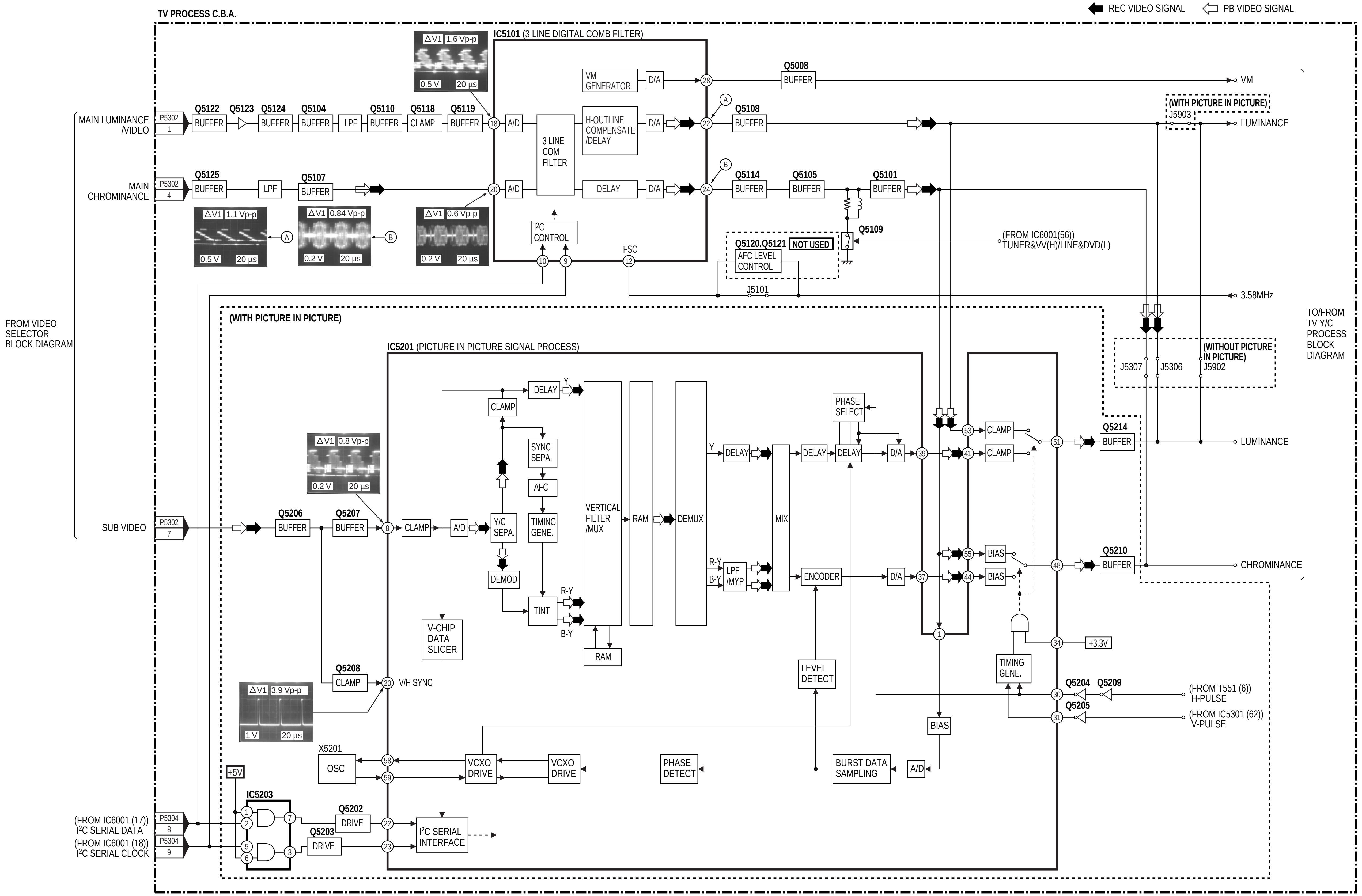
MODE PIN NO.	STOP
IC4701	
1	0
2	0
3	0
4	6.4
5	0
6	0
7	0
8	5.0
TP4591	0
TP4592	0
TP4701	0
TP4702	0
TP4710	0
TP4711	0.3

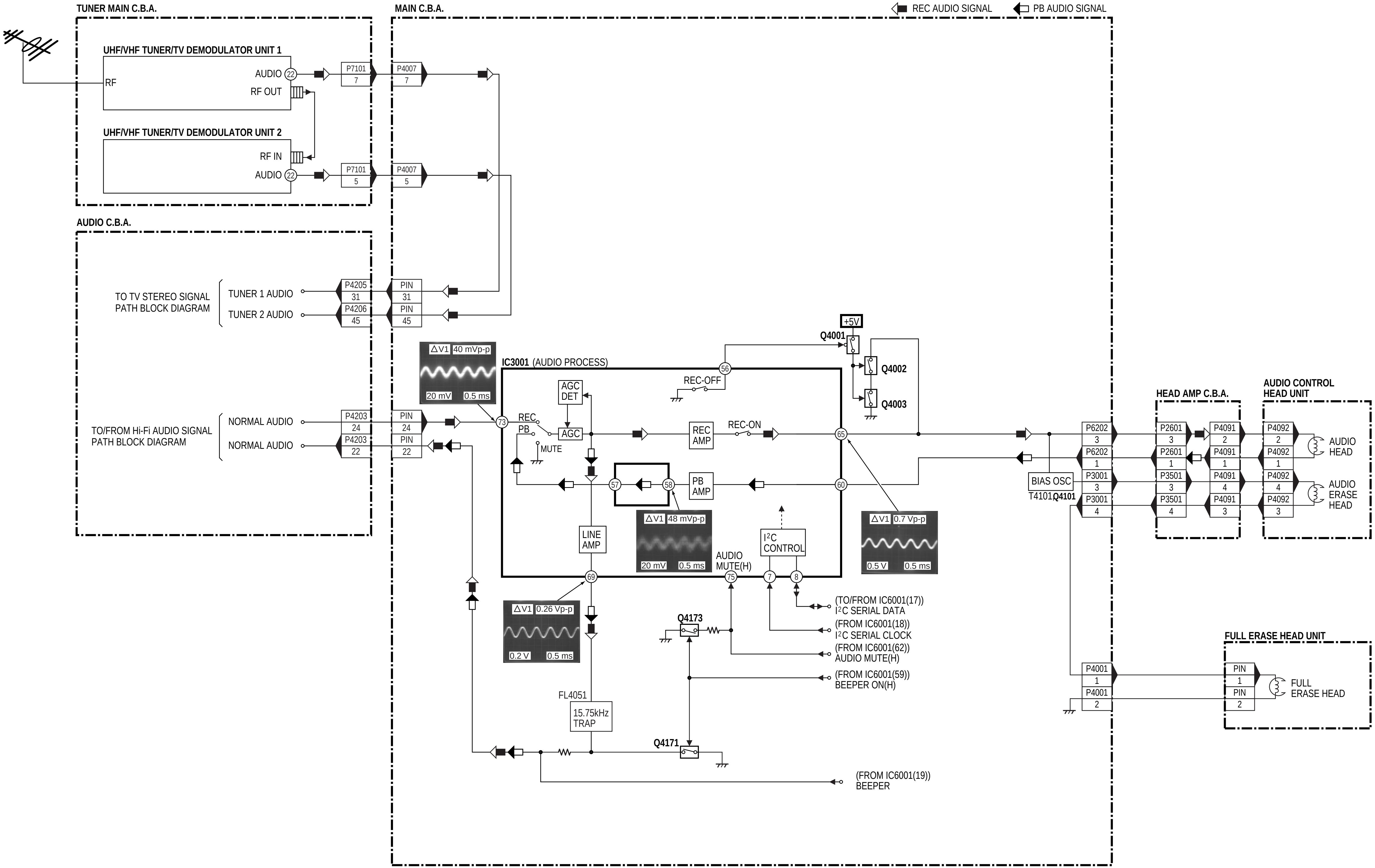


TUNER MAIN C.B.A.
TV MAIN C.B.A.
POWER SUPPLY C.B.A.
AC CORD
P801
1
P801
2
F801
6.3A/125V
L801
LINE FILTER
L802
LINE FILTER
D804-807
FULL-WAVE RECRIFIER
TP804
TP805
RL801
(FROM IC6001(44))
TV POWER ON(H)
Q801
SW+12V
P850
1
P850
2
T850
IC850
SWITCHING CONTROL
D853
D855
D856
D854
ΔV1 3 Vp-p
1 V 2 µs
ΔV1 250 Vp-p
50 V 2 µs
ΔV1 40 Vp-p
10 V 2 µs
F
G
D859
RECTIFIER
C865,870
SMOOTHING
PR851
TP851
+17V
D857
RECTIFIER
C866,871
SMOOTHING
PR852
TP852
-17V
D860
RECTIFIER
C867,872
SMOOTHING
PR850
TP853
+22V
D858
RECTIFIER
C868
SMOOTHING
+140V
ΔV1 250 Vp-p
50 V 2 µs
IC851
D852
IC852
SHUNT REG.
TP803
TP802
P1001
1
P1001
2
F1001
1.6A/125V
L1001
LINE FILTER
D1001
FULL-WAVE RECRIFIER
F1501
1.6A/125V
T1001
E
D1002
D
Q1002
(SWITCHING CONTROL)
C
Q1001
(SWITCHING)
D1003
D1016
NOT USED
IC1001
IC1002
SHUNT REG.
D1005
RECTIFIER
C1011
SMOOTHING
UNSW+30V(TUNER)
D1006
RECTIFIER
C1012,1013
SMOOTHING
PR1002
UNSW+14V
D1015
(OVER VOLTAGE PROTECTOR)
D1008
RECTIFIER
C1016,1017
SMOOTHING
PR1001
UNSW+5V(SYS.CTL)
Q1053
SW+5V(VIDEO)
Q1054
SW+5V(TUNER)
D1009
RECTIFIER
C1019
SMOOTHING
PR1003
Q1070,1071
-5.1V REGULATOR
SW-5.1V
Q1051
SW+12V
Q1052
(FROM IC6001(28))
POWER ON(L)
ΔV1 0.32 Vp-p
0.2 V 5 µs
ΔV1 290 Vp-p
50 V 5 µs
ΔV1 80 Vp-p
50 V 5 µs
ΔV1 80 Vp-p
20 V 5 µs
T1501
C1516
SMOOTHING
D1508
RECTIFIER
L1509
LINE FILTER
DRIVE+12V
Q1504
PR1501
C1515,1517
SMOOTHING
D1507
RECTIFIER
D1509
(OVER VOLTAGE PROTECTOR)
Q1505
D1505
A
Q1503
(SWITCHING)
D1502
FULL-WAVE RECRIFIER
L1501
LINE FILTER
RL1501
Q1501
(FROM IC6001(49))
DVD POWER ON(H)
SW+12V
Q1502
(SWITCHING CONTROL)
ΔV1 0.2 Vp-p
0.2 V 5 µs
L1507
LINE FILTER
DRIVE+5V
PR1502
C1514,C1518
SMOOTHING
D1506
RECTIFIER
B
D1503
D1504
IC1505
+3.3V REG.
PR1503
+3.3V
NOT USED
IC1502
IC1503
SHUNT REG.
ΔV1 270 Vp-p
50 V 5 µs
ΔV1 10 Vp-p
5 V 5 µs

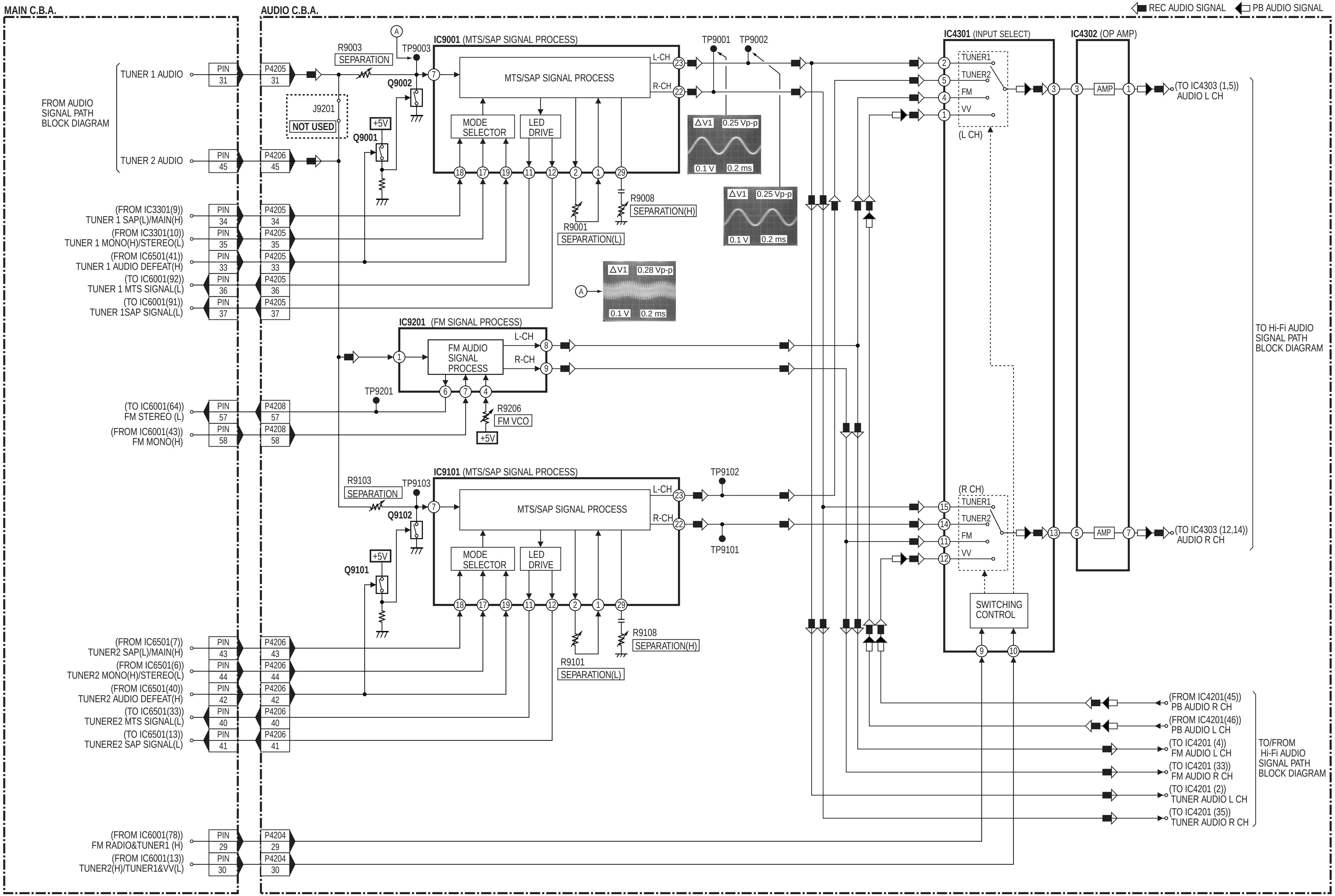

REC VIDEO SIGNAL
PB VIDEO SIGNAL
TUNER MAIN C.B.A.
MAIN C.B.A.
HEAD AMP C.B.A.
OPERATION C.B.A.
UHF/VHF TUNER/TV DEMODULATOR UNIT 1
RF
VIDEO
RF OUT
UHF/VHF TUNER/TV DEMODULATOR UNIT 2
RF IN
Q7001
Q7101
BUFFER
P7101
P4007
NOT USED
J9501
J9502
VIDEO IN 1
Q9501
Q9502
Q9503
Q9504
CLAMP
S-VIDEO IN 1
Y
C
IC3001
(VIDEO PROCESS)
TUNER
LINE1
LINE2
REC
PB
REC/PB LUMINANCE SIGNAL PROCESS
REC/PB CHROMINANCE SIGNAL PROCESS
Y/C MIX
ART V/H MIX
IC3201
CCD 1H DELAY
AT ENVELOPE DETECT
PB-Y
REC-Y
REC-C
PB-C
I²C CONTROL
TP3002
P3001
Q3002
AMP
(FROM IC6001(98)) ROTARY SW
(TO IC6001(89)) ENVELOPE VOLTAGE
(FROM IC6001(24)) V-LOCK PULSE
(TO/FROM IC6001(17)) I²C SERIAL DATA
(FROM IC6001(18)) I²C SERIAL CLOCK
OSC
X3001 (3.58MHz)
Q3001
TP3001
J3071
Q3071
IC3202 (CNR)
CHROMA NOISE REDUCTION
IC3501 (HEAD AMP)
TP3501
SP
LP/SLP
L
R
P3501
P3503
VIDEO SP L HEAD
VIDEO SP R HEAD
VIDEO LP/SLP L HEAD
VIDEO LP/SLP R HEAD
(FROM IC6001(23)) HEAD SW PULSE
(FROM IC6001(99)) HEAD AMP SW
(FROM IC6001(57)) PB(L)
ΔV1 2 Vp-p 1 V 20 ms
ΔV1 0.4 Vp-p 0.2 V 10 µs
ΔV1 0.5 Vp-p 0.2 V 20 µs
ΔV1 0.2 Vp-p 0.1 V 5 ms
ΔV1 0.4 Vp-p 0.2 V 5 ms
ΔV1 3.1 Vp-p 1 V 5 ms
ΔV1 4.3 Vp-p 2 V 5 ms
ΔV1 1 Vp-p 0.5 V 20 ms
A ΔV1 0.27 Vp-p 0.1 V 20 µs
B ΔV1 0.27 Vp-p 0.1 V 20 µs
C ΔV1 0.2 Vp-p 0.1 V 5 ms
VIDEO IN 2
J4701
J4711
P4701
P4005
IC3101 (SW)
PARENT
(TO IC3301 (15)) VIDEO
(FROM IC3301 (11)) DIFFERENCE CH(H)
Q3101
J3102
Q3601
Q3602
Q3603
Q3604
(TO IC7251(5)) SUB VV VIDEO
(TO IC7231(3)) MAIN VV CHROMINANCE
(FROM IC7221(7)) MAIN LUMINANCE/VIDEO
(TO IC7211(5)) VIDEO
(TO IC7211(1)/IC7251(1)) TUNER1 VIDEO
(TO IC7241(1)) LINE1 VIDEO
(TO IC7241(3)) LINE2 VIDEO
(TO IC7211(3)/IC7251(3)) TUNER2 VIDEO
(TO IC7201(1)) COMPONENT-Y1
(TO IC7231(1)) COMPONENT-C1
(TO IC7201(3)) COMPONENT-Y2
(TO IC7231(1)) COMPONENT-C2
TO/FROM VIDEO SELECTOR BLOCK DIAGRAM
Q4710
Q4711
Q4712
Q4713
S-VIDEO IN 2

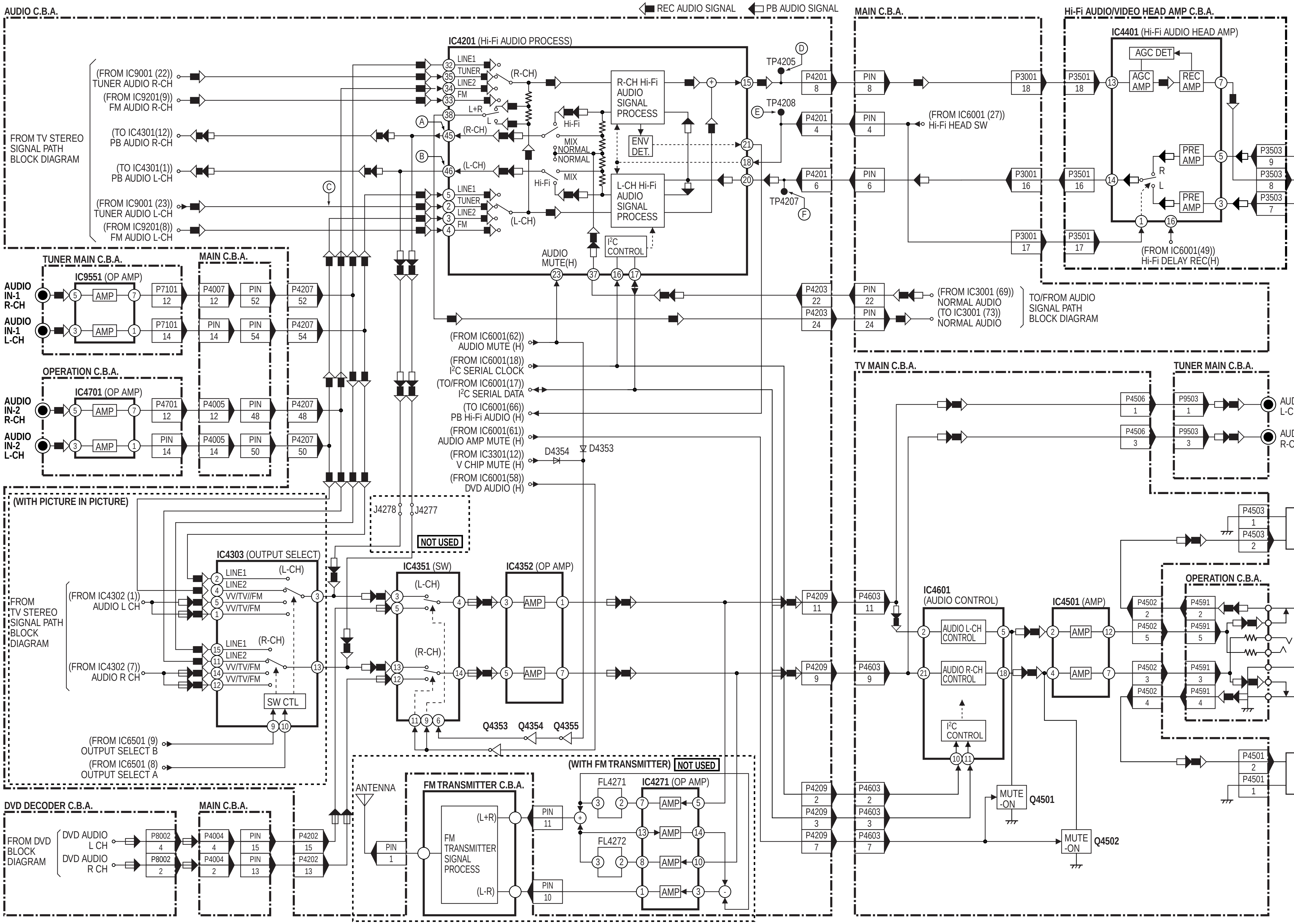

REC VIDEO SIGNAL
PB VIDEO SIGNAL
DVD DECODER C.B.A.
MAIN C.B.A.
FROM DVD BLOCK DIAGRAM
DVD LUMINANCE
DVD CHROMINANCE
DVD VIDEO
P8002 9
P8002 7
P8002 11
P4004 9
P4004 7
P4004 11
FROM VIDEO SIGNAL PATH BLOCK DIAGRAM
MAIN LUMINANCE/VIDEO
COMPONENT-Y1
COMPONENT-Y2
TUNER1 VIDEO
TUNER2 VIDEO
VIDEO
COMPONENT-C2
COMPONENT-C1
MAIN VV CHROMINANCE
LINE1 VIDEO
LINE2 VIDEO
SUB VV VIDEO
NOT USED
J7201
J7202
IC7201 (SW)
S-LINE1
S-LINE2
S-LINE
DVD
IC7211 (SW)
TUNER1
TUNER2
TUNER
VV
IC7221 (SW)
S-LINE/DVD
TUNER/VV
PARENT Y/V
MUTE
IC7231 (SW)
S-LINE
VV
S-LINE/VV
DVD
IC7241 (SW)
LINE1
LINE2
LINE
DVD
IC7251 (SW)
TUNER1
TUNER2
TUNER
VV
IC7261 (SW)
LINE/DVD
TUNER/VV
Q7231
P5312 1
P5312 4
P5312 7
MAIN LUMINANCE/VIDEO
MAIN CHROMINANCE
SUB VIDEO
TO PICTURE IN PICTURE BLOCK DIAGRAM
(FROM IC6501(37)) TUNER2(H)
(FROM IC6501(36)) VV(H)
(FROM IC6501(38)) LINE2(H)
(FROM IC6501(39)) DVD(H)
(FROM IC6001(55)) VV(H)
(FROM IC6001(52)) DVD(H)
(FROM IC6001(54)) TUNER2(H)
(FROM IC6001(53)) S-LINE2(H)
(FROM IC6501(12)) TUNER&VV(H)/LINE&DVD(L)
(FROM IC6001(56)) TUNER&VV(H)/LINE&DVD(L)
(FROM IC6001(32)) VIDEO MUTE2(H)
(FROM IC6001(11)) COLOR MUTE(H)

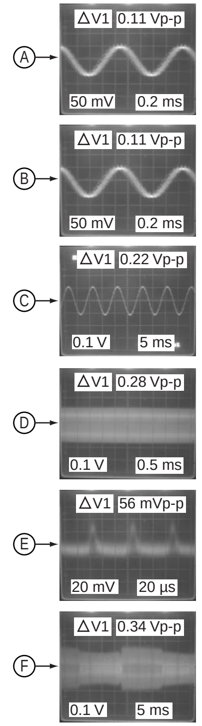

TV PROCESS C.B.A.
REC VIDEO SIGNAL
PB VIDEO SIGNAL
IC5101 (3 LINE DIGITAL COMB FILTER)
FROM VIDEO SELECTOR BLOCK DIAGRAM
MAIN LUMINANCE /VIDEO
MAIN CHROMINANCE
SUB VIDEO
P5302 1
P5302 4
P5302 7
Q5122 BUFFER
Q5123
Q5124 BUFFER
Q5104 BUFFER
LPF
Q5110 BUFFER
Q5118 CLAMP
Q5119 BUFFER
Q5125 BUFFER
LPF
Q5107 BUFFER
ΔV1 1.6 Vp-p 0.5 V 20 µs
ΔV1 1.1 Vp-p 0.5 V 20 µs
ΔV1 0.84 Vp-p 0.2 V 20 µs
ΔV1 0.6 Vp-p 0.2 V 20 µs
A/D
3 LINE COM FILTER
VM GENERATOR
H-OUTLINE COMPENSATE /DELAY
DELAY
D/A
I2C CONTROL
FSC
Q5008 BUFFER
VM
Q5108 BUFFER
Q5114 BUFFER
Q5105 BUFFER
Q5101 BUFFER
Q5109
Q5120,Q5121 NOT USED
AFC LEVEL CONTROL
J5101
(FROM IC6001(56)) TUNER&VV(H)/LINE&DVD(L)
3.58MHz
(WITH PICTURE IN PICTURE) J5903
LUMINANCE
TO/FROM TV Y/C PROCESS BLOCK DIAGRAM
(WITH PICTURE IN PICTURE)
IC5201 (PICTURE IN PICTURE SIGNAL PROCESS)
J5307
J5306
(WITHOUT PICTURE IN PICTURE) J5902
ΔV1 0.8 Vp-p 0.2 V 20 µs
Q5206 BUFFER
Q5207 BUFFER
CLAMP
A/D
Y/C SEPA.
DEMOD
CLAMP
DELAY
Y
SYNC SEPA.
AFC
TIMING GENE.
TINT
R-Y
B-Y
V-CHIP DATA SLICER
VERTICAL FILTER /MUX
RAM
DEMUX
RAM
Y
R-Y
B-Y
DELAY
LPF /MYP
MIX
DELAY
PHASE SELECT
DELAY
ENCODER
D/A
LEVEL DETECT
CLAMP
BIAS
Q5214 BUFFER
LUMINANCE
Q5210 BUFFER
CHROMINANCE
+3.3V
TIMING GENE.
Q5204 Q5209
(FROM T551 (6)) H-PULSE
Q5205
(FROM IC5301 (62)) V-PULSE
BIAS
A/D
BURST DATA SAMPLING
PHASE DETECT
VCXO DRIVE
VCXO DRIVE
X5201 OSC
Q5208 CLAMP
V/H SYNC
ΔV1 3.9 Vp-p 1 V 20 µs
+5V
IC5203
Q5202 DRIVE
Q5203 DRIVE
I2C SERIAL INTERFACE
(FROM IC6001 (17)) I2C SERIAL DATA
(FROM IC6001 (18)) I2C SERIAL CLOCK
P5304 8
P5304 9

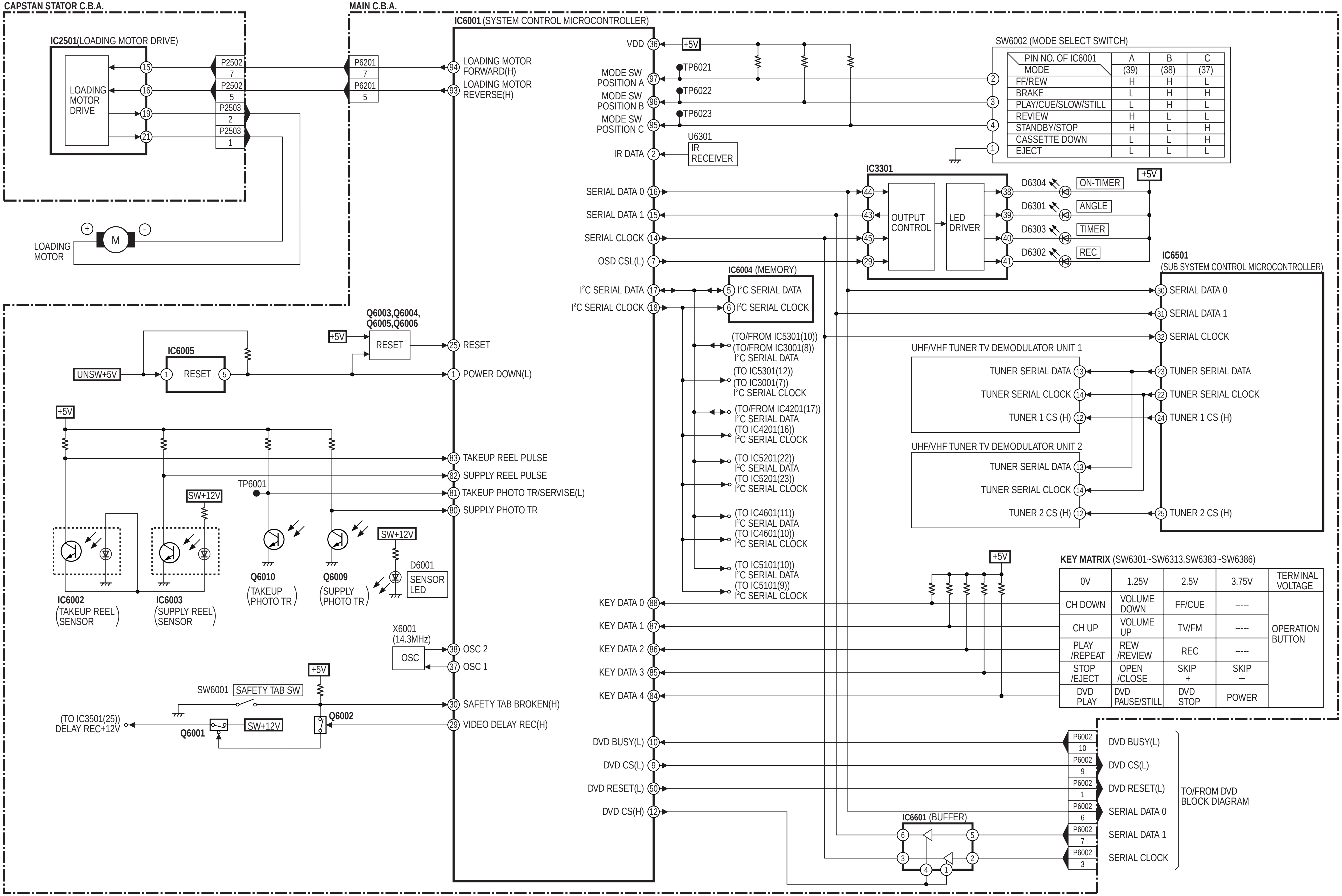


REC AUDIO SIGNAL
PB AUDIO SIGNAL
TUNER MAIN C.B.A.
MAIN C.B.A.
UHF/VHF TUNER/TV DEMODULATOR UNIT 1
RF
AUDIO 22
RF OUT
UHF/VHF TUNER/TV DEMODULATOR UNIT 2
RF IN
AUDIO 22
P7101 7
P7101 5
P4007 7
P4007 5
AUDIO C.B.A.
TO TV STEREO SIGNAL PATH BLOCK DIAGRAM
TUNER 1 AUDIO
TUNER 2 AUDIO
P4205 31
P4206 45
PIN 31
PIN 45
TO/FROM Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM
NORMAL AUDIO
NORMAL AUDIO
P4203 24
P4203 22
PIN 24
PIN 22
ΔV1 40 mVp-p
20 mV 0.5 ms
IC3001 (AUDIO PROCESS)
AGC DET
AGC
REC
PB
MUTE
REC-OFF
REC AMP
REC-ON
PB AMP
LINE AMP
ΔV1 48 mVp-p
20 mV 0.5 ms
AUDIO MUTE(H)
I2C CONTROL
73
56
65
60
57
58
69
75
7
8
+5V
Q4001
Q4002
Q4003
ΔV1 0.7 Vp-p
0.5 V 0.5 ms
ΔV1 0.26 Vp-p
0.2 V 0.5 ms
Q4173
Q4171
FL4051
15.75kHz TRAP
(TO/FROM IC6001(17)) I2C SERIAL DATA
(FROM IC6001(18)) I2C SERIAL CLOCK
(FROM IC6001(62)) AUDIO MUTE(H)
(FROM IC6001(59)) BEEPER ON(H)
(FROM IC6001(19)) BEEPER
BIAS OSC
T4101 Q4101
P6202 3
P6202 1
P3001 3
P3001 4
HEAD AMP C.B.A.
P2601 3
P2601 1
P3501 3
P3501 4
P4091 2
P4091 1
P4091 4
P4091 3
AUDIO CONTROL HEAD UNIT
P4092 2
P4092 1
P4092 4
P4092 3
AUDIO HEAD
AUDIO ERASE HEAD
P4001 1
P4001 2
FULL ERASE HEAD UNIT
PIN 1
PIN 2
FULL ERASE HEAD


MAIN C.B.A.
AUDIO C.B.A.
REC AUDIO SIGNAL
PB AUDIO SIGNAL
FROM AUDIO SIGNAL PATH BLOCK DIAGRAM
TUNER 1 AUDIO
TUNER 2 AUDIO
PIN 31
P4205 31
PIN 45
P4206 45
(FROM IC3301(9)) TUNER 1 SAP(L)/MAIN(H)
PIN 34
P4205 34
(FROM IC3301(10)) TUNER 1 MONO(H)/STEREO(L)
PIN 35
P4205 35
(FROM IC6501(41)) TUNER 1 AUDIO DEFEAT(H)
PIN 33
P4205 33
(TO IC6001(92)) TUNER 1 MTS SIGNAL(L)
PIN 36
P4205 36
(TO IC6001(91)) TUNER 1SAP SIGNAL(L)
PIN 37
P4205 37
A
R9003
SEPARATION
TP9003
J9201
NOT USED
Q9002
+5V
Q9001
IC9001 (MTS/SAP SIGNAL PROCESS)
MTS/SAP SIGNAL PROCESS
MODE SELECTOR
LED DRIVE
L-CH
R-CH
7
23
22
18
17
19
11
12
2
1
29
R9001
SEPARATION(L)
R9008
SEPARATION(H)
TP9001
TP9002
ΔV1 0.25 Vp-p
0.1 V 0.2 ms
ΔV1 0.25 Vp-p
0.1 V 0.2 ms
A
ΔV1 0.28 Vp-p
0.1 V 0.2 ms
IC9201 (FM SIGNAL PROCESS)
FM AUDIO SIGNAL PROCESS
L-CH
R-CH
1
8
9
6
7
4
TP9201
R9206
FM VCO
+5V
(TO IC6001(64)) FM STEREO (L)
PIN 57
P4208 57
(FROM IC6001(43)) FM MONO(H)
PIN 58
P4208 58
IC9101 (MTS/SAP SIGNAL PROCESS)
MTS/SAP SIGNAL PROCESS
R9103
SEPARATION
TP9103
Q9102
+5V
Q9101
MODE SELECTOR
LED DRIVE
L-CH
R-CH
7
23
22
18
17
19
11
12
2
1
29
R9101
SEPARATION(L)
R9108
SEPARATION(H)
TP9102
TP9101
(FROM IC6501(7)) TUNER2 SAP(L)/MAIN(H)
PIN 43
P4206 43
(FROM IC6501(6)) TUNER2 MONO(H)/STEREO(L)
PIN 44
P4206 44
(FROM IC6501(40)) TUNER2 AUDIO DEFEAT(H)
PIN 42
P4206 42
(TO IC6501(33)) TUNERE2 MTS SIGNAL(L)
PIN 40
P4206 40
(TO IC6501(13)) TUNERE2 SAP SIGNAL(L)
PIN 41
P4206 41
(FROM IC6001(78)) FM RADIO&TUNER1 (H)
PIN 29
P4204 29
(FROM IC6001(13)) TUNER2(H)/TUNER1&VV(L)
PIN 30
P4204 30
IC4301 (INPUT SELECT)
TUNER1
TUNER2
FM
VV
(L CH)
2
5
4
1
3
(R CH)
TUNER1
TUNER2
FM
VV
15
14
11
12
13
SWITCHING CONTROL
9
10
IC4302 (OP AMP)
AMP
3
1
AMP
5
7
(TO IC4303 (1,5)) AUDIO L CH
(TO IC4303 (12,14)) AUDIO R CH
TO Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM
(FROM IC4201(45)) PB AUDIO R CH
(FROM IC4201(46)) PB AUDIO L CH
(TO IC4201 (4)) FM AUDIO L CH
(TO IC4201 (33)) FM AUDIO R CH
(TO IC4201 (2)) TUNER AUDIO L CH
(TO IC4201 (35)) TUNER AUDIO R CH
TO/FROM Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM


REC AUDIO SIGNAL
PB AUDIO SIGNAL
AUDIO C.B.A.
IC4201 (Hi-Fi AUDIO PROCESS)
LINE1
TUNER
LINE2
FM
L+R
L
(R-CH)
(L-CH)
R-CH Hi-Fi AUDIO SIGNAL PROCESS
L-CH Hi-Fi AUDIO SIGNAL PROCESS
ENV DET.
Hi-Fi
MIX
NORMAL
I2C CONTROL
AUDIO MUTE(H)
TP4205
TP4208
TP4207
FROM TV STEREO SIGNAL PATH BLOCK DIAGRAM
(FROM IC9001 (22)) TUNER AUDIO R-CH
(FROM IC9201(9)) FM AUDIO R-CH
(TO IC4301(12)) PB AUDIO R-CH
(TO IC4301(1)) PB AUDIO L-CH
(FROM IC9001 (23)) TUNER AUDIO L-CH
(FROM IC9201(8)) FM AUDIO L-CH
P4201
PIN
MAIN C.B.A.
(FROM IC6001 (27)) Hi-Fi HEAD SW
P3001
P3501
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
IC4401 (Hi-Fi AUDIO HEAD AMP)
AGC DET
AGC AMP
REC AMP
PRE AMP
R
L
P3503
Hi-Fi AUDIO R HEAD
Hi-Fi AUDIO L HEAD
(FROM IC6001(49)) Hi-Fi DELAY REC(H)
P4203
(FROM IC3001 (69)) NORMAL AUDIO
(TO IC3001 (73)) NORMAL AUDIO
TO/FROM AUDIO SIGNAL PATH BLOCK DIAGRAM
TUNER MAIN C.B.A.
IC9551 (OP AMP)
AMP
AUDIO IN-1 R-CH
AUDIO IN-1 L-CH
P7101
P4007
P4207
OPERATION C.B.A.
IC4701 (OP AMP)
AUDIO IN-2 R-CH
AUDIO IN-2 L-CH
P4701
P4005
(FROM IC6001(62)) AUDIO MUTE (H)
(FROM IC6001(18)) I2C SERIAL CLOCK
(TO/FROM IC6001(17)) I2C SERIAL DATA
(TO IC6001(66)) PB Hi-Fi AUDIO (H)
(FROM IC6001(61)) AUDIO AMP MUTE (H)
(FROM IC3301(12)) V CHIP MUTE (H)
(FROM IC6001(58)) DVD AUDIO (H)
D4354
D4353
(WITH PICTURE IN PICTURE)
J4278
J4277
NOT USED
IC4303 (OUTPUT SELECT)
VV/TV//FM
VV/TV/FM
SW CTL
FROM TV STEREO SIGNAL PATH BLOCK DIAGRAM
(FROM IC4302 (1)) AUDIO L CH
(FROM IC4302 (7)) AUDIO R CH
(FROM IC6501 (9)) OUTPUT SELECT B
(FROM IC6501 (8)) OUTPUT SELECT A
IC4351 (SW)
IC4352 (OP AMP)
Q4353
Q4354
Q4355
P4209
DVD DECODER C.B.A.
FROM DVD BLOCK DIAGRAM
DVD AUDIO L CH
DVD AUDIO R CH
P8002
P4004
P4202
ANTENNA
FM TRANSMITTER C.B.A.
FM TRANSMITTER SIGNAL PROCESS
(L+R)
(L-R)
(WITH FM TRANSMITTER)
NOT USED
FL4271
FL4272
IC4271 (OP AMP)
TV MAIN C.B.A.
P4506
P9503
AUDIO OUT L-CH
AUDIO OUT R-CH
P4503
SPEAKER L-CH
P4603
IC4601 (AUDIO CONTROL)
AUDIO L-CH CONTROL
AUDIO R-CH CONTROL
I2C CONTROL
IC4501 (AMP)
P4502
P4591
EARPHONE JACK
MUTE -ON
Q4501
Q4502
P4501
SPEAKER R-CH


A
ΔV1 0.11 Vp-p
50 mV 0.2 ms
B
ΔV1 0.11 Vp-p
50 mV 0.2 ms
C
ΔV1 0.22 Vp-p
0.1 V 5 ms
D
ΔV1 0.28 Vp-p
0.1 V 0.5 ms
E
ΔV1 56 mVp-p
20 mV 20 µs
F
ΔV1 0.34 Vp-p
0.1 V 5 ms

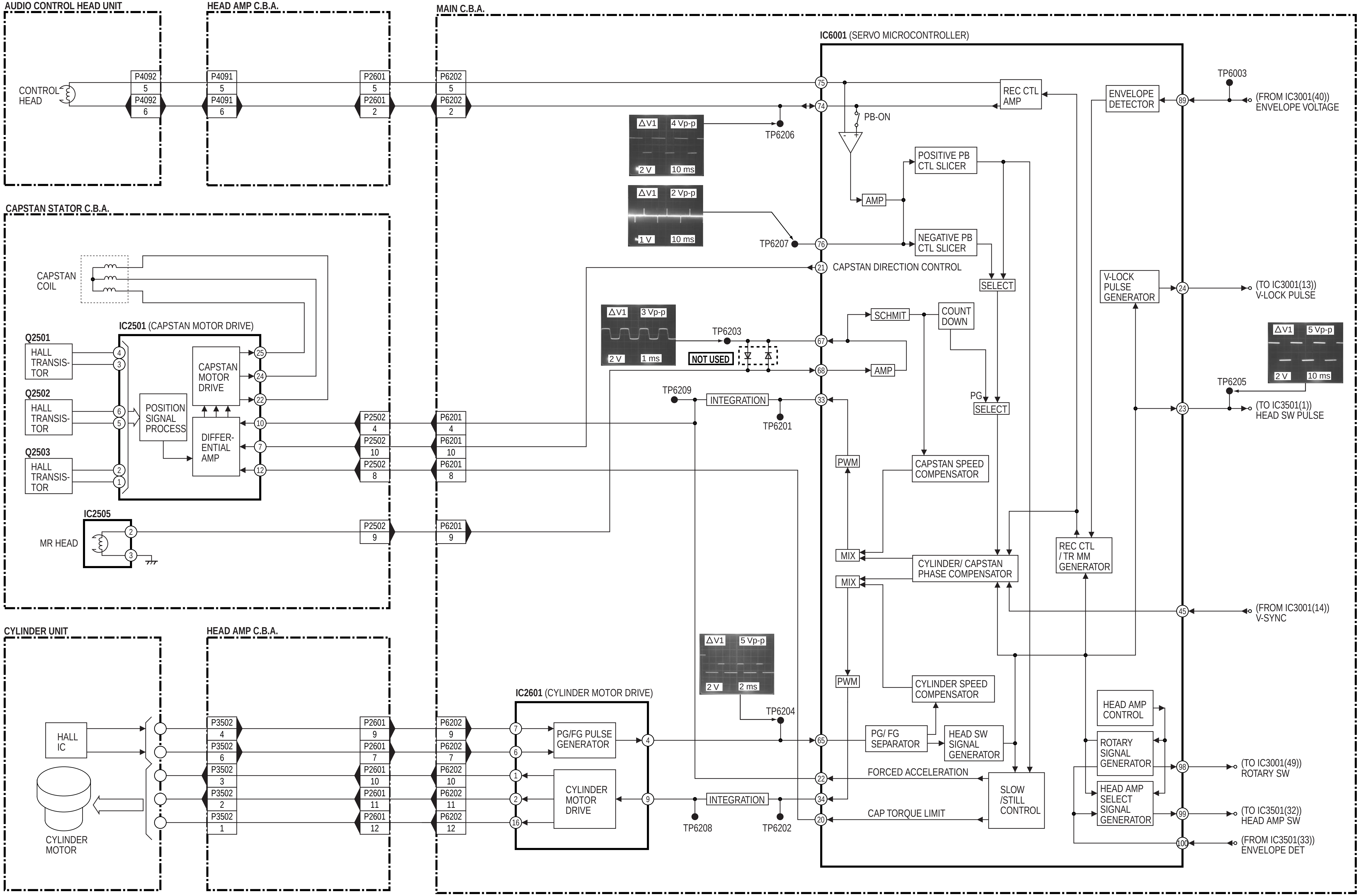

CAPSTAN STATOR C.B.A.
MAIN C.B.A.
IC2501(LOADING MOTOR DRIVE)
LOADING MOTOR DRIVE
15
16
19
21
P2502 7
P2502 5
P2503 2
P2503 1
P6201 7
P6201 5
M
+
-
LOADING MOTOR
IC6001 (SYSTEM CONTROL MICROCONTROLLER)
94 LOADING MOTOR FORWARD(H)
93 LOADING MOTOR REVERSE(H)
VDD 36
+5V
MODE SW POSITION A 97
TP6021
MODE SW POSITION B 96
TP6022
MODE SW POSITION C 95
TP6023
U6301
IR DATA 2
IR RECEIVER
SW6002 (MODE SELECT SWITCH)
IC3301
SERIAL DATA 0 16
SERIAL DATA 1 15
SERIAL CLOCK 14
OSD CSL(L) 7
44
43
45
29
OUTPUT CONTROL
LED DRIVER
38
39
40
41
D6304
ON-TIMER
D6301
ANGLE
D6303
TIMER
D6302
REC
+5V
IC6004 (MEMORY)
I²C SERIAL DATA 17
I²C SERIAL CLOCK 18
5 I²C SERIAL DATA
6 I²C SERIAL CLOCK
(TO/FROM IC5301(10))
(TO/FROM IC3001(8))
I²C SERIAL DATA
(TO IC5301(12))
(TO IC3001(7))
I²C SERIAL CLOCK
(TO/FROM IC4201(17))
I²C SERIAL DATA
(TO IC4201(16))
I²C SERIAL CLOCK
(TO IC5201(22))
I²C SERIAL DATA
(TO IC5201(23))
I²C SERIAL CLOCK
(TO IC4601(11))
I²C SERIAL DATA
(TO IC4601(10))
I²C SERIAL CLOCK
(TO IC5101(10))
I²C SERIAL DATA
(TO IC5101(9))
I²C SERIAL CLOCK
IC6501
(SUB SYSTEM CONTROL MICROCONTROLLER)
30 SERIAL DATA 0
31 SERIAL DATA 1
32 SERIAL CLOCK
23 TUNER SERIAL DATA
22 TUNER SERIAL CLOCK
24 TUNER 1 CS (H)
25 TUNER 2 CS (H)
UHF/VHF TUNER TV DEMODULATOR UNIT 1
TUNER SERIAL DATA 13
TUNER SERIAL CLOCK 14
TUNER 1 CS (H) 12
UHF/VHF TUNER TV DEMODULATOR UNIT 2
TUNER SERIAL DATA 13
TUNER SERIAL CLOCK 14
TUNER 2 CS (H) 12
Q6003,Q6004,
Q6005,Q6006
+5V
RESET
25 RESET
IC6005
UNSW+5V
1
RESET
5
1 POWER DOWN(L)
+5V
83 TAKEUP REEL PULSE
82 SUPPLY REEL PULSE
TP6001
81 TAKEUP PHOTO TR/SERVISE(L)
80 SUPPLY PHOTO TR
SW+12V
SW+12V
D6001
SENSOR LED
IC6002
(TAKEUP REEL SENSOR)
IC6003
(SUPPLY REEL SENSOR)
Q6010
(TAKEUP PHOTO TR)
Q6009
(SUPPLY PHOTO TR)
X6001
(14.3MHz)
OSC
38 OSC 2
37 OSC 1
+5V
SW6001
SAFETY TAB SW
Q6002
30 SAFETY TAB BROKEN(H)
(TO IC3501(25))
DELAY REC+12V
Q6001
SW+12V
29 VIDEO DELAY REC(H)
KEY DATA 0 88
KEY DATA 1 87
KEY DATA 2 86
KEY DATA 3 85
KEY DATA 4 84
+5V
DVD BUSY(L) 10
DVD CS(L) 9
DVD RESET(L) 50
DVD CS(H) 12
IC6601 (BUFFER)
6
5
3
2
4
1
P6002 10
P6002 9
P6002 1
P6002 6
P6002 7
P6002 3
DVD BUSY(L)
DVD CS(L)
DVD RESET(L)
SERIAL DATA 0
SERIAL DATA 1
SERIAL CLOCK
TO/FROM DVD BLOCK DIAGRAM

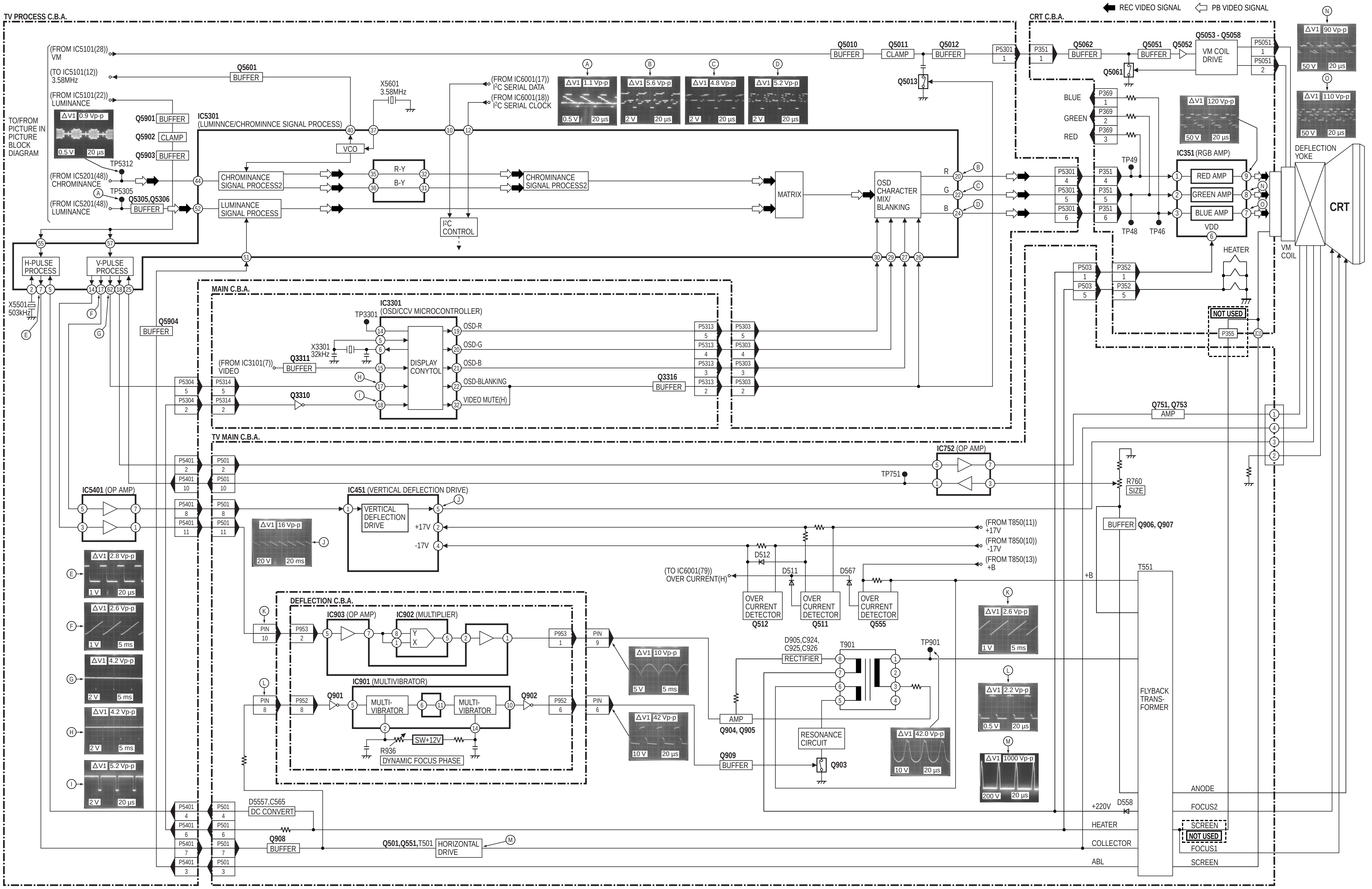
SW6002 (MODE SELECT SWITCH)

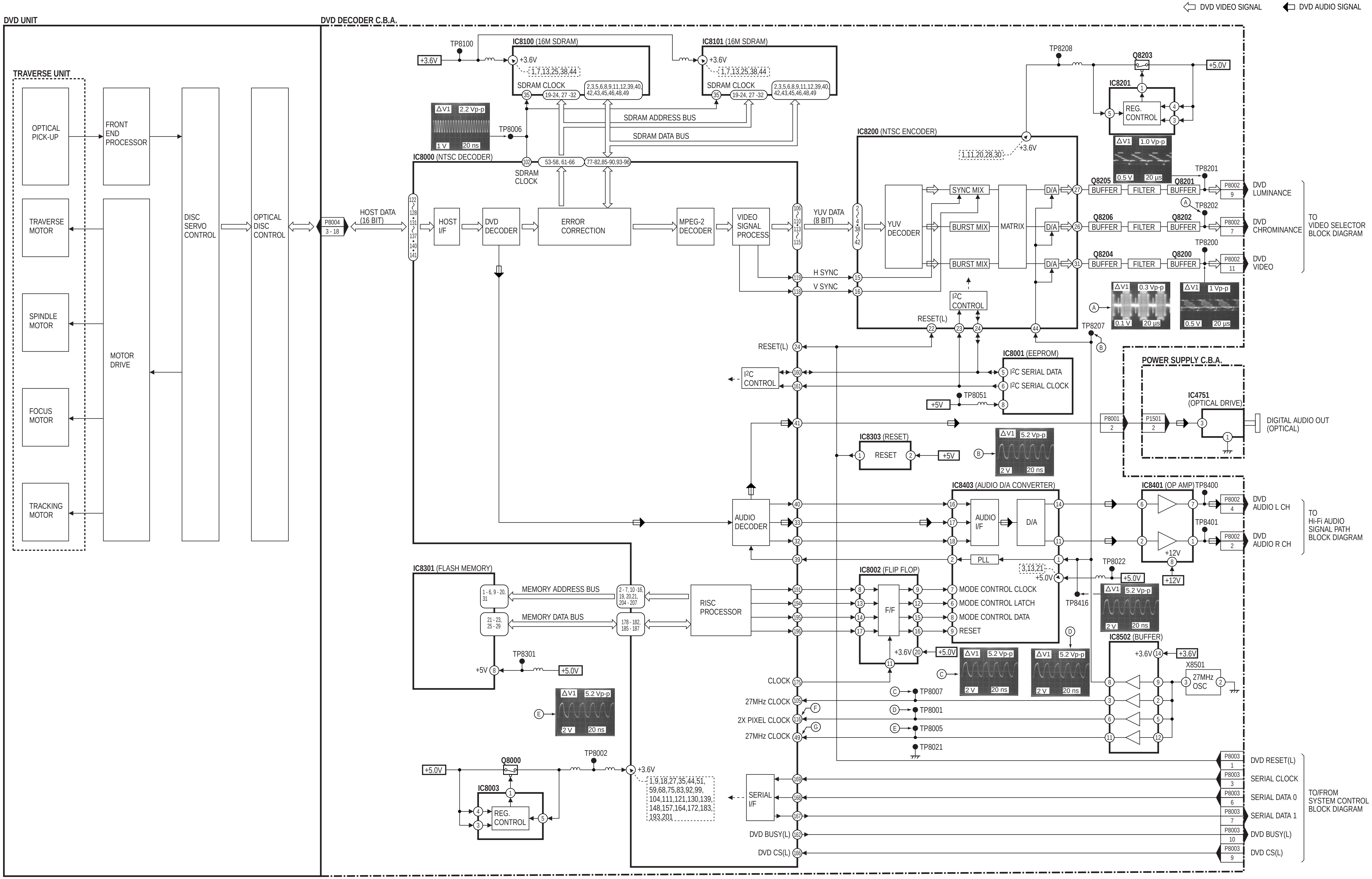
PIN NO. OF IC6001 / MODE	A (39)	B (38)	C (37)
FF/REW	H	H	L
BRAKE	L	H	H
PLAY/CUE/SLOW/STILL	L	H	L
REVIEW	H	L	L
STANDBY/STOP	H	L	H
CASSETTE DOWN	L	L	H
EJECT	L	L	L

KEY MATRIX (SW6301~SW6313,SW6383~SW6386)

0V	1.25V	2.5V	3.75V	TERMINAL VOLTAGE
CH DOWN	VOLUME DOWN	FF/CUE	-----	OPERATION BUTTON
CH UP	VOLUME UP	TV/FM	-----	
PLAY /REPEAT	REW /REVIEW	REC	-----	
STOP /EJECT	OPEN /CLOSE	SKIP +	SKIP –	
DVD PLAY	DVD PAUSE/STILL	DVD STOP	POWER	


AUDIO CONTROL HEAD UNIT
CONTROL HEAD
P4092 5
P4092 6
HEAD AMP C.B.A.
P4091 5
P4091 6
P2601 5
P2601 2
MAIN C.B.A.
P6202 5
P6202 2
IC6001 (SERVO MICROCONTROLLER)
75
74
REC CTL AMP
PB-ON
ENVELOPE DETECTOR
89
TP6003
(FROM IC3001(40)) ENVELOPE VOLTAGE
ΔV1 4 Vp-p 2 V 10 ms
TP6206
POSITIVE PB CTL SLICER
AMP
ΔV1 2 Vp-p 1 V 10 ms
TP6207
76
NEGATIVE PB CTL SLICER
CAPSTAN STATOR C.B.A.
CAPSTAN COIL
21
CAPSTAN DIRECTION CONTROL
SELECT
V-LOCK PULSE GENERATOR
24
(TO IC3001(13)) V-LOCK PULSE
IC2501 (CAPSTAN MOTOR DRIVE)
Q2501
HALL TRANSIS-TOR
4
3
CAPSTAN MOTOR DRIVE
25
24
22
ΔV1 3 Vp-p 2 V 1 ms
TP6203
NOT USED
67
68
SCHMIT
COUNT DOWN
AMP
ΔV1 5 Vp-p 2 V 10 ms
TP6205
Q2502
HALL TRANSIS-TOR
6
5
POSITION SIGNAL PROCESS
DIFFER-ENTIAL AMP
10
7
12
TP6209
INTEGRATION
33
TP6201
PG
SELECT
23
(TO IC3501(1)) HEAD SW PULSE
P2502 4
P2502 10
P2502 8
P6201 4
P6201 10
P6201 8
Q2503
HALL TRANSIS-TOR
2
1
PWM
CAPSTAN SPEED COMPENSATOR
IC2505
MR HEAD
2
3
P2502 9
P6201 9
MIX
CYLINDER/ CAPSTAN PHASE COMPENSATOR
REC CTL / TR MM GENERATOR
MIX
45
(FROM IC3001(14)) V-SYNC
CYLINDER UNIT
HEAD AMP C.B.A.
ΔV1 5 Vp-p 2 V 2 ms
PWM
CYLINDER SPEED COMPENSATOR
IC2601 (CYLINDER MOTOR DRIVE)
HEAD AMP CONTROL
TP6204
HALL IC
P3502 4
P3502 6
P3502 3
P3502 2
P3502 1
P2601 9
P2601 7
P2601 10
P2601 11
P2601 12
P6202 9
P6202 7
P6202 10
P6202 11
P6202 12
7
6
1
2
16
PG/FG PULSE GENERATOR
4
65
PG/ FG SEPARATOR
HEAD SW SIGNAL GENERATOR
ROTARY SIGNAL GENERATOR
98
(TO IC3001(49)) ROTARY SW
FORCED ACCELERATION
22
CYLINDER MOTOR DRIVE
9
INTEGRATION
34
SLOW /STILL CONTROL
HEAD AMP SELECT SIGNAL GENERATOR
99
(TO IC3501(32)) HEAD AMP SW
CYLINDER MOTOR
CAP TORQUE LIMIT
20
TP6208
TP6202
100
(FROM IC3501(33)) ENVELOPE DET

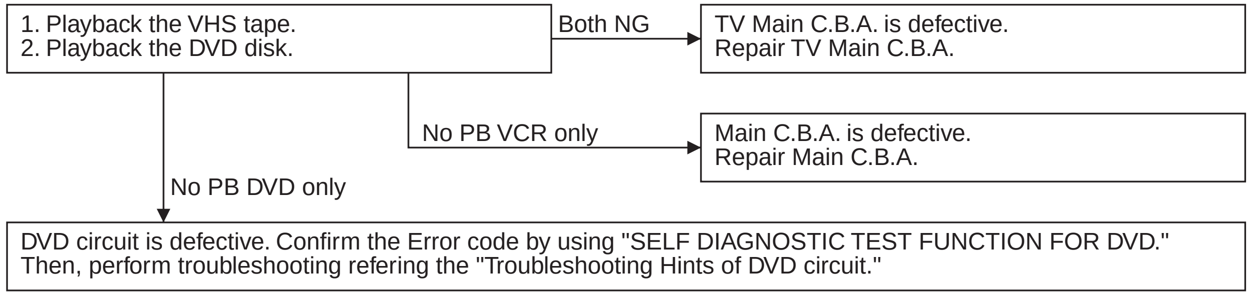

REC VIDEO SIGNAL
PB VIDEO SIGNAL
TV PROCESS C.B.A.
CRT C.B.A.
MAIN C.B.A.
TV MAIN C.B.A.
DEFLECTION C.B.A.
TO/FROM PICTURE IN PICTURE BLOCK DIAGRAM
(FROM IC5101(28)) VM
(TO IC5101(12)) 3.58MHz
(FROM IC5101(22)) LUMINANCE
(FROM IC5201(48)) CHROMINANCE
(FROM IC5201(48)) LUMINANCE
Q5601 BUFFER
Q5901 BUFFER
Q5902 CLAMP
Q5903 BUFFER
Q5305,Q5306 BUFFER
TP5312
TP5305
IC5301 (LUMINNCE/CHROMINNCE SIGNAL PROCESS)
X5601 3.58MHz
VCO
(FROM IC6001(17)) I2C SERIAL DATA
(FROM IC6001(18)) I2C SERIAL CLOCK
CHROMINANCE SIGNAL PROCESS2
LUMINANCE SIGNAL PROCESS
R-Y
B-Y
I2C CONTROL
MATRIX
OSD CHARACTER MIX/ BLANKING
R
G
B
Q5010 BUFFER
Q5011 CLAMP
Q5012 BUFFER
Q5013
P5301
P351
Q5062 BUFFER
Q5051 BUFFER
Q5052
Q5053 - Q5058
VM COIL DRIVE
P5051
Q5061
BLUE
GREEN
RED
P369
TP49
TP48
TP46
IC351 (RGB AMP)
RED AMP
GREEN AMP
BLUE AMP
VDD
DEFLECTION YOKE
CRT
VM COIL
HEATER
P503
P352
NOT USED
P355
H-PULSE PROCESS
V-PULSE PROCESS
X5501 503kHz
Q5904 BUFFER
IC3301 (OSD/CCV MICROCONTROLLER)
TP3301
X3301 32kHz
DISPLAY CONYTOL
OSD-R
OSD-G
OSD-B
OSD-BLANKING
VIDEO MUTE(H)
(FROM IC3101(7)) VIDEO
Q3311 BUFFER
Q3310
Q3316 BUFFER
P5313
P5303
P5304
P5314
P5401
P501
IC5401 (OP AMP)
IC451 (VERTICAL DEFLECTION DRIVE)
VERTICAL DEFLECTION DRIVE
+17V
-17V
IC752 (OP AMP)
TP751
R760 SIZE
BUFFER Q906, Q907
Q751, Q753 AMP
(FROM T850(11)) +17V
(FROM T850(10)) -17V
(FROM T850(13)) +B
(TO IC6001(79)) OVER CURRENT(H)
D512
D511
D567
OVER CURRENT DETECTOR Q512
OVER CURRENT DETECTOR Q511
OVER CURRENT DETECTOR Q555
+B
T551
FLYBACK TRANS-FORMER
IC903 (OP AMP)
IC902 (MULTIPLIER)
Y
X
P953
PIN
IC901 (MULTIVIBRATOR)
Q901
Q902
MULTI-VIBRATOR
P952
SW+12V
R936
DYNAMIC FOCUS PHASE
D905,C924, C925,C926 RECTIFIER
T901
TP901
AMP
Q904, Q905
Q909 BUFFER
RESONANCE CIRCUIT
Q903
D5557,C565 DC CONVERT
Q908 BUFFER
Q501,Q551,T501 HORIZONTAL DRIVE
+220V
D558
ANODE
FOCUS2
HEATER
COLLECTOR
ABL
SCREEN
NOT USED
FOCUS1
SCREEN
A ΔV1 1.1 Vp-p 0.5 V 20 µs
B ΔV1 5.6 Vp-p 2 V 20 µs
C ΔV1 4.8 Vp-p 2 V 20 µs
D ΔV1 5.2 Vp-p 2 V 20 µs
ΔV1 0.9 Vp-p 0.5 V 20 µs
ΔV1 120 Vp-p 50 V 20 µs
N ΔV1 90 Vp-p 50 V 20 µs
O ΔV1 110 Vp-p 50 V 20 µs
J ΔV1 16 Vp-p 20 V 20 ms
E ΔV1 2.8 Vp-p 1 V 20 µs
F ΔV1 2.6 Vp-p 1 V 5 ms
G ΔV1 4.2 Vp-p 2 V 5 ms
H ΔV1 4.2 Vp-p 2 V 5 ms
I ΔV1 5.2 Vp-p 2 V 20 µs
ΔV1 10 Vp-p 5 V 5 ms
ΔV1 42 Vp-p 10 V 20 µs
K ΔV1 2.6 Vp-p 1 V 5 ms
L ΔV1 2.2 Vp-p 0.5 V 20 µs
ΔV1 42.0 Vp-p 10 V 20 µs
M ΔV1 1000 Vp-p 200 V 20 µs


DVD VIDEO SIGNAL
DVD AUDIO SIGNAL
DVD UNIT
DVD DECODER C.B.A.
TRAVERSE UNIT
OPTICAL PICK-UP
FRONT END PROCESSOR
TRAVERSE MOTOR
SPINDLE MOTOR
FOCUS MOTOR
TRACKING MOTOR
MOTOR DRIVE
DISC SERVO CONTROL
OPTICAL DISC CONTROL
P8004 3 - 18
HOST DATA (16 BIT)
TP8100
+3.6V
IC8100 (16M SDRAM)
1,7,13,25,38,44
SDRAM CLOCK
19-24, 27 -32
2,3,5,6,8,9,11,12,39,40, 42,43,45,46,48,49
IC8101 (16M SDRAM)
SDRAM ADDRESS BUS
SDRAM DATA BUS
TP8006
ΔV1 2.2 Vp-p 1 V 20 ns
IC8000 (NTSC DECODER)
SDRAM CLOCK
53-58, 61-66
77-82,85-90,93-96
HOST I/F
DVD DECODER
ERROR CORRECTION
MPEG-2 DECODER
VIDEO SIGNAL PROCESS
YUV DATA (8 BIT)
H SYNC
V SYNC
IC8200 (NTSC ENCODER)
1,11,20,28,30
+3.6V
YUV DECODER
SYNC MIX
BURST MIX
BURST MIX
MATRIX
D/A
I2C CONTROL
RESET(L)
TP8208
Q8203
+5.0V
IC8201
REG. CONTROL
ΔV1 1.0 Vp-p 0.5 V 20 µs
TP8201
Q8205 BUFFER
FILTER
Q8201 BUFFER
P8002 9
DVD LUMINANCE
TP8202
Q8206 BUFFER
Q8202 BUFFER
P8002 7
DVD CHROMINANCE
TP8200
Q8204 BUFFER
Q8200 BUFFER
P8002 11
DVD VIDEO
TO VIDEO SELECTOR BLOCK DIAGRAM
ΔV1 0.3 Vp-p 0.1 V 20 µs
ΔV1 1 Vp-p 0.5 V 20 µs
TP8207
RESET(L)
I2C CONTROL
IC8001 (EEPROM)
I2C SERIAL DATA
I2C SERIAL CLOCK
TP8051
+5V
POWER SUPPLY C.B.A.
IC4751 (OPTICAL DRIVE)
P8001 2
P1501 2
DIGITAL AUDIO OUT (OPTICAL)
IC8303 (RESET)
RESET
+5V
ΔV1 5.2 Vp-p 2 V 20 ns
IC8403 (AUDIO D/A CONVERTER)
AUDIO I/F
D/A
PLL
AUDIO DECODER
IC8401 (OP AMP)
TP8400
P8002 4
DVD AUDIO L CH
TP8401
P8002 2
DVD AUDIO R CH
+12V
TO Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM
3,13,21
+5.0V
TP8022
TP8416
ΔV1 5.2 Vp-p 2 V 20 ns
IC8002 (FLIP FLOP)
F/F
MODE CONTROL CLOCK
MODE CONTROL LATCH
MODE CONTROL DATA
RESET
+3.6V
IC8301 (FLASH MEMORY)
MEMORY ADDRESS BUS
1 - 6, 9 - 20, 31
2 - 7, 10 -16, 19, 20,21, 204 - 207
MEMORY DATA BUS
21 - 23, 25 - 29
178 - 182, 185 - 187
RISC PROCESSOR
TP8301
+5V
+5.0V
ΔV1 5.2 Vp-p 2 V 20 ns
CLOCK
27MHz CLOCK
2X PIXEL CLOCK
27MHz CLOCK
TP8007
TP8001
TP8005
TP8021
IC8502 (BUFFER)
+3.6V
X8501
27MHz OSC
ΔV1 5.2 Vp-p 2 V 20 ns
ΔV1 5.2 Vp-p 2 V 20 ns
Q8000
TP8002
+5.0V
IC8003
REG. CONTROL
+3.6V
1,9,18,27,35,44,51, 59,68,75,83,92,99, 104,111,121,130,139, 148,157,164,172,183, 193,201
SERIAL I/F
DVD BUSY(L)
DVD CS(L)
P8003 1 DVD RESET(L)
P8003 3 SERIAL CLOCK
P8003 6 SERIAL DATA 0
P8003 7 SERIAL DATA 1
P8003 10 DVD BUSY(L)
P8003 9 DVD CS(L)
TO/FROM SYSTEM CONTROL BLOCK DIAGRAM

Troubleshooting Hints

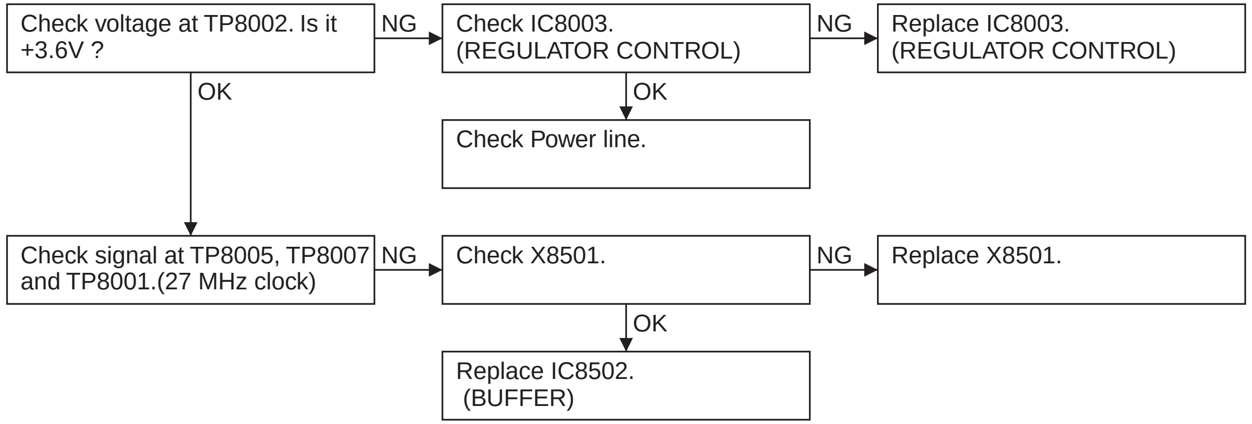
How to confirm which of DVD circuit or other circuits is defective.

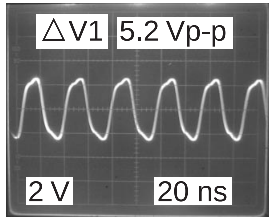
1) Confirm DVD operation and VCR operation


1. Playback the VHS tape.
2. Playback the DVD disk.
Both NG
TV Main C.B.A. is defective.
Repair TV Main C.B.A.
No PB VCR only
Main C.B.A. is defective.
Repair Main C.B.A.
No PB DVD only
DVD circuit is defective. Confirm the Error code by using "SELF DIAGNOSTIC TEST FUNCTION FOR DVD."
Then, perform troubleshooting refering the "Troubleshooting Hints of DVD circuit."

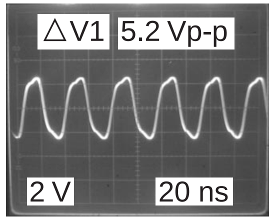
Troubleshooting Hints of DVD circuit

Error Code: 01 (Cause: Decoder Error)

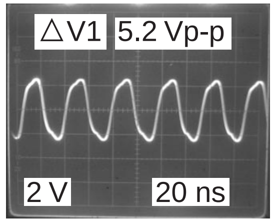

Check voltage at TP8002. Is it +3.6V ?
NG
Check IC8003. (REGULATOR CONTROL)
NG
Replace IC8003. (REGULATOR CONTROL)
OK
Check Power line.
OK
Check signal at TP8005, TP8007 and TP8001.(27 MHz clock)
NG
Check X8501.
NG
Replace X8501.
OK
Replace IC8502. (BUFFER)



TP8005

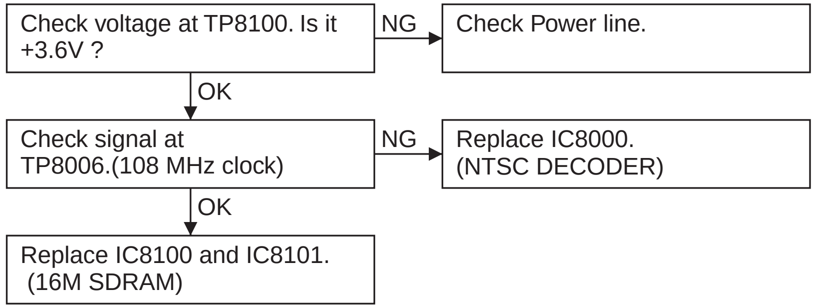


TP8007

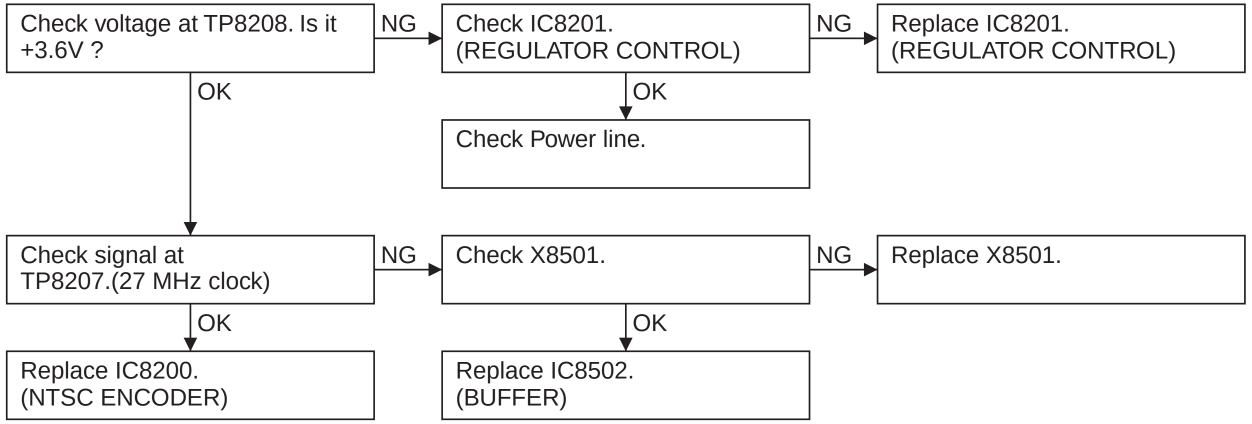


TP8001

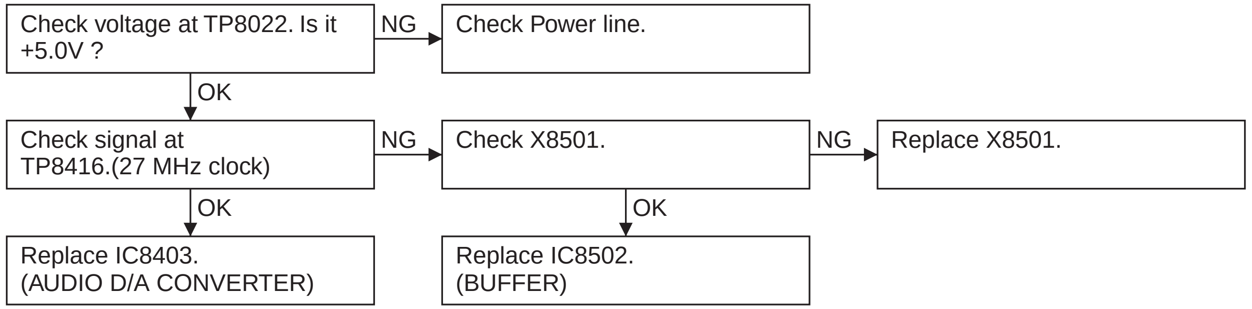
Error Code: 02 (Cause: SDRAM Error)

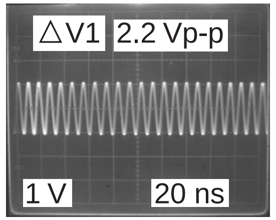

Check voltage at TP8100. Is it +3.6V ?
NG
Check Power line.
OK
Check signal at TP8006.(108 MHz clock)
NG
Replace IC8000. (NTSC DECODER)
OK
Replace IC8100 and IC8101. (16M SDRAM)

Error Code: 03 (Cause: NTSC Encoder Error)

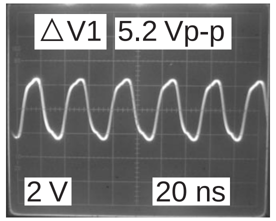

Check voltage at TP8208. Is it +3.6V ?
NG
Check IC8201. (REGULATOR CONTROL)
NG
Replace IC8201. (REGULATOR CONTROL)
OK
Check Power line.
OK
Check signal at TP8207.(27 MHz clock)
NG
Check X8501.
NG
Replace X8501.
OK
Replace IC8200. (NTSC ENCODER)
OK
Replace IC8502. (BUFFER)

Error Code: 04 (Cause: Audio DAC Error)

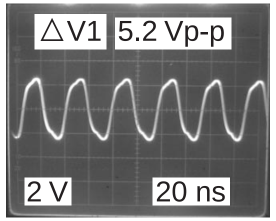

Check voltage at TP8022. Is it +5.0V ?
NG
Check Power line.
OK
Check signal at TP8416.(27 MHz clock)
NG
Check X8501.
NG
Replace X8501.
OK
Replace IC8403. (AUDIO D/A CONVERTER)
OK
Replace IC8502. (BUFFER)



TP8006

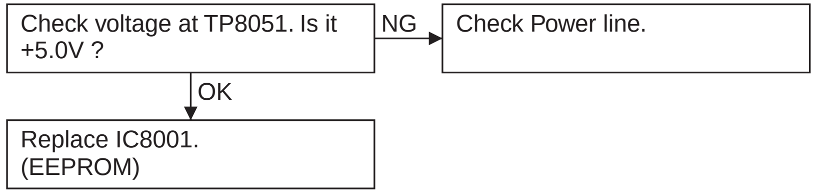


TP8207



TP8416

Error Code: 05 (Cause: EEPROM Error)

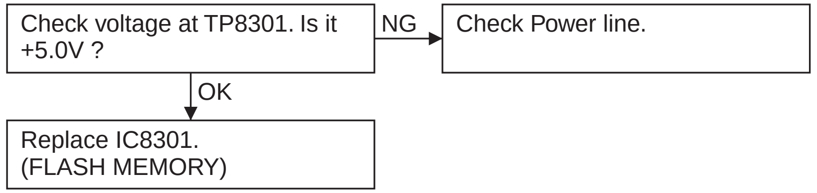


Check voltage at TP8051. Is it +5.0V ?

Check Power line.

Replace IC8001. (EEPROM)

Error Code: 06 (Cause: Flash ROM Error)



Check voltage at TP8301. Is it +5.0V ?

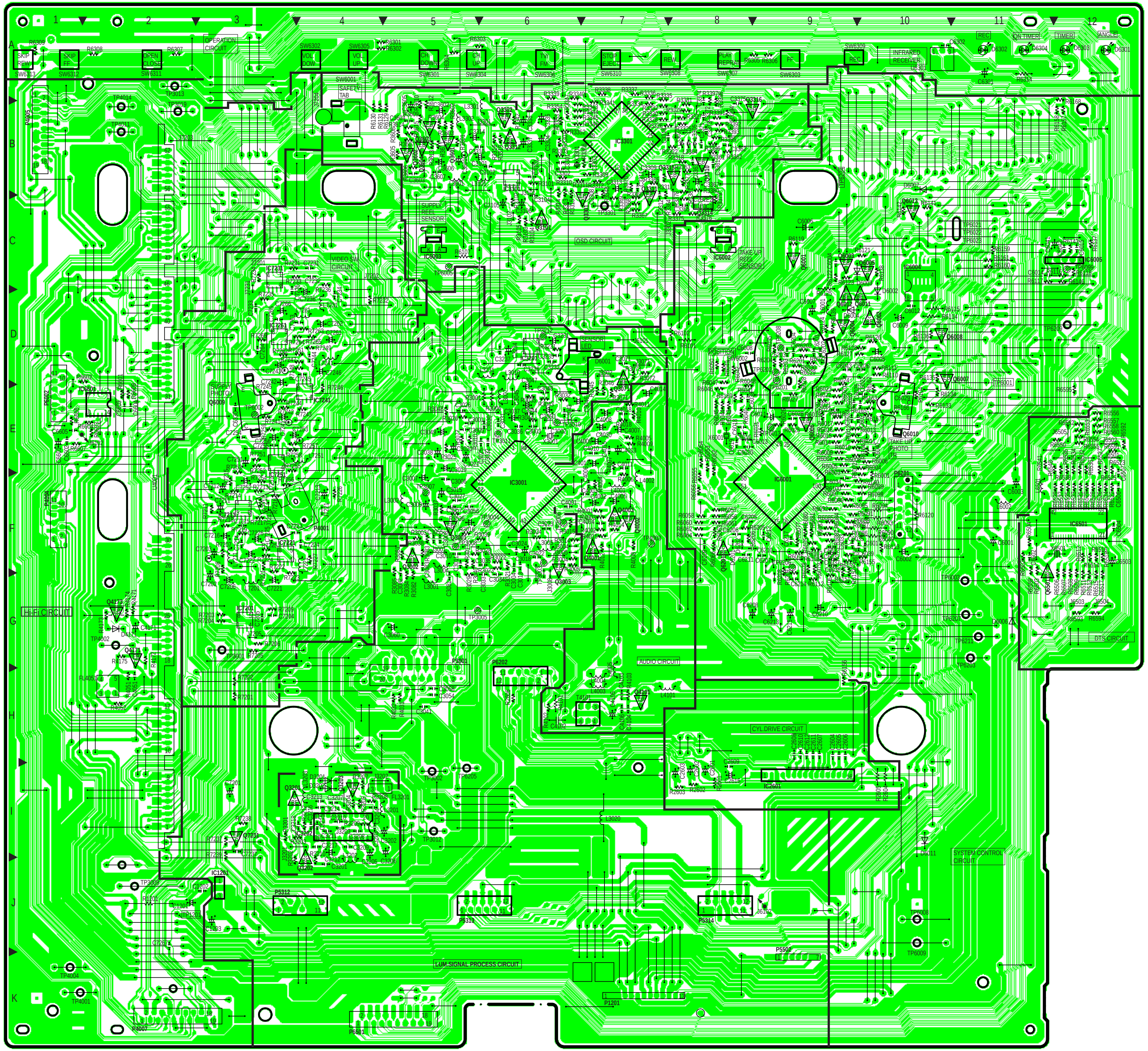
Check Power line.

Replace IC8301. (FLASH MEMORY)

Error Code: 10, 20, 30 , 40, 50, 60, 70 (Cause: Other Error)

DVD unit is defective.
Replace DVD unit.

MAIN C.B.A. VEPS3091B (A) / VEPS3091A (B)


OPERATION CIRCUIT
VIDEO SW CIRCUIT
OSD CIRCUIT
HI-FI CIRCUIT
AUDIO CIRCUIT
CYL.DRIVE CIRCUIT
SYSTEM CONTROL CIRCUIT
LUM.SIGNAL PROCESS CIRCUIT
DTS CIRCUIT
IC3001
IC3301
IC6001
IC6501
IC2601
IC1201
SUPPLY REEL SENSOR
TAKE UP REEL SENSOR
INFRARED RECEIVER
SAFETY TAB
REC
ON TIMER
TIMER
ANGLE

VJBS3091

COMPARISON CHART
OF MODELS & MARKS

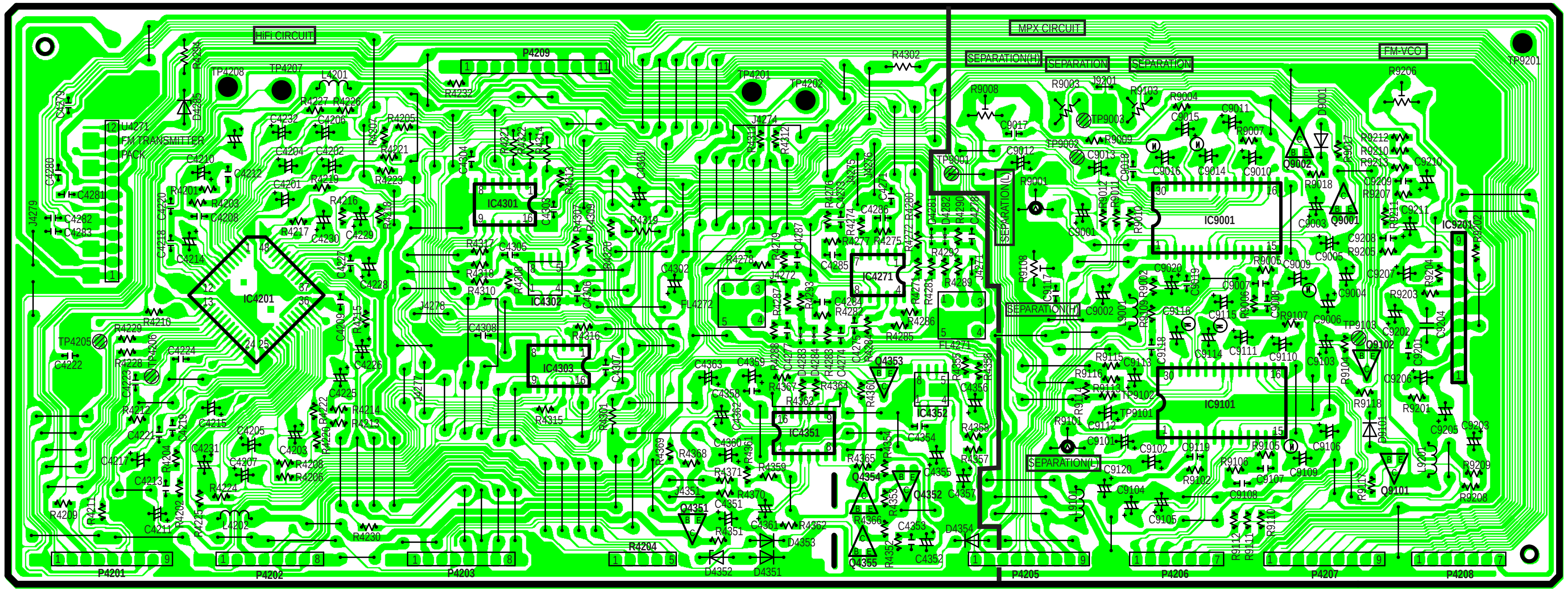
MODEL	MARK
Not Used	A
PV-DF2700-K	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

AUDIO C.B.A. VEPS4036B (A) / VEPS4036A (B)


HiFi CIRCUIT
MPX CIRCUIT
FM-VCO
SEPARATION(H)
SEPARATION
SEPARATION
SEPARATION(L)
SEPARATION(H)
SEPARATION(L)
U4271
FM TRANSMITTER
PACK
IC4201
IC4301
IC4302
IC4303
IC4271
IC4351
IC9001
IC9101
IC9201
P4201
P4202
P4203
P4204
P4205
P4206
P4207
P4208
P4209
TP4201
TP4202
TP4205
TP4206
TP4207
TP4208
TP9001
TP9002
TP9003
TP9101
TP9102
TP9103
TP9201
Q4351
Q4352
Q4353
Q4354
Q4355
Q9001
Q9002
Q9101
Q9102
FL4271
FL4272

VJBS4036

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
Not Used	A
PV-DF2700-K	B